The late **SIR ANDREW CLARK,** P.R.C.P., in a lecture on "The Treatment of Fibroid Lung Disease," given at the London Hospital, Session 1892–3, said :—

"I have said that these Fibroid cases are poor creatures, thin and white, and have what may be called nutritive debility, and the question is: What am I to do with them? You cannot do better than endeavour to make the patient walk in the way of physiological righteousness. But that sometimes will not do. Some people may be physiologically well-behaved, and somehow they do not thrive on it. Can you do anything in those cases? There are two remedies which sometimes do succeed where the ordinary diet will not succeed in nourishing the patient. The one is Cod Liver Oil and Malt given with food—a preparation called Bynol—and the other is the remedy called Bynin Emulsion, consisting of Hypophosphites, Oil, and Malt; both are prepared by Messrs. Allen & Hanburys. These are two good nutritive agents in promoting nutrition."

(See also THE LANCET, *January 6th*, 1894, *p.* 3, *and January 20th, p.* 188.)

Bynol
The "Perfected" Malt and Oil.

Is a most intimate mixture (or so-called *Solution*) of COD LIVER OIL with ALLEN AND HANBURYS' MALT EXTRACT, in which the oily flavour is completely disguised. At the same time absorption and assimilation are rendered more certain, partly owing to the extremely fine division of the particles and partly to the presence of Malt, by which the digestive processes are greatly assisted.

The Lancet writes :—"'Bynol' is one of the compounds or solutions of Malt Extract and Cod Liver Oil which are now so deservedly popular. Globules of oil cannot be distinguished. . . . . We believe that 'Bynol' will be taken and digested by many who cannot assimilate Cod Liver Oil."

The British Medical Journal writes :—"'Bynol' is a perfect combination of Malt Extract with Cod Liver Oil. . . . It has a pleasant taste, without any suspicion of Cod Liver Oil.

Sold in Wide-mouthed Jars, at 2/- *and* 3/6 *each.* 18 - *and* 32/- *per dozen to the Profession.*

Bynin Emulsion.

Is another extremely agreeable form in which to take Cod Liver Oil, as it resembles raw cream in appearance, and a delicate custard in taste. Absolutely no trace of Oil can be detected by the palate. It possesses a further advantage in that it contains the valuable food substances of our "Mother's Milk (No. 2) Food," together with the valuable digestive properties of Malt Extract; and, lastly, it has a useful tonic action owing to the presence of the Hypophosphites of Lime and Soda. Thus, taking it as a whole, not only is nutriment supplied in an easily digested and very palatable form, but the work of digestion is rendered easier by the presence of diastase, and the nervous system in particular is invigorated by the aid of mineral tonics. The large percentage of Cod Liver Oil present makes this preparation an extremely valuable one to those who are losing flesh, as the arrest of emaciation by its use is generally very marked.

Sold in Capsuled Bottles only, at 1 4, 2 6, 4 9 *and* 9 -. *Or* 12/-, 23/-, 44 -, *and* 80 - *per dozen to the Profession.*

Bynin (Liquid Malt).

Sold in Bottles at 1/9 and 3/- each. 16/- and 27/- per dozen to the Profession.

SUPERSEDES ALL OTHER FORMS OF MALT EXTRACT.

BYNIN is a highly concentrated LIQUID Extract of Malt, free from the troublesome viscidity or treacle-like consistence of the preparation usually met with. It is a valuable article of diet, and is largely prescribed in digestive disorders, and wherever it is desired to improve assimilation, as in the wasting diseases of children, Phthisis, &c. Given with or immediately after a meal, it facilitates the digestion of Farinaceous Foods.

The *Lancet* writes: "An active malt essence. . . . We find that one ounce of Bynin will digest perfectly one pound of starch. This is a most favourable result, and coupled with the fluidity and pleasant flavour renders this preparation a most valuable one."

☞ **One Fluid Ounce of Bynin represents One Ounce by Weight of Allen & Hanburys' Ordinary Thick Malt Extract, which is sold in wide mouthed jars, similar to their Bynol jars at 1/6 & 2/9 ea.**

Byno-Hypophosphites

Is a neutral solution of the **Hypophosphites of Iron, Manganese, Calcium** and **Potassium**, to which are added the **Alkaloids of Cinchona** and **Nux Vomica**. The whole being in combination with **Bynin**, our Liquid Extract of Malt, which obviously provides a more suitable vehicle for the Hypophosphites than the *sugar* syrups.

☞ The Alkaloids are present as they are found in the plants from which they are derived that is in combination with the natural acids, and in this condition are believed to be more readily assimilable.

Sold in Bottles at (Retail) 2/6 & 4/6 each.
24/- and 41/- per dozen to the Profession.

Byno-Pancreatin

A fluid extract of the ferments and other constituents of the Pancreas in combination with the nutritive and digestive components of Malt. It is especially valuable in peptonizing milk and other foods. Full directions accompany each Bottle.

In Bottles at (Retail) 2/-, 3/6 and 6/6 each.
18/-, 32/- and 58/- per dozen to the Profession.

Byno-Pepsin

This is a solution of Pepsin in combination with "BYNIN" (Liquid Malt). It thus affords, in a highly active and agreeable form, the agents required for the digestion of both animal and farinaceous food. This solution possesses the advantage of preserving its activity unimpaired for long periods.

Sold in 4, 8 and 16 oz. Bottles at (Retail) 2/6, 4/6 & 8/-, or
23/-, 41/- & 72/- per dozen to the Profession.

Coca Bynin

A combination of BYNIN with the active principles of the leaves of Erythroxylon Coca, possessing all the valuable nutritive and diastasic properties of Malt, together with the extraordinarily stimulating and exhilarating effects of the Coca plant. It may be used for the **extemporaneous** preparation of **Coca Wine.** It is very palatable.

In Bottles at (Retail) 2/6 & 4/6. 24/- & 41/- per dozen to the Profession.

Samples of any of the above will be supplied, on application, to Medical Men resident in Great Britain.

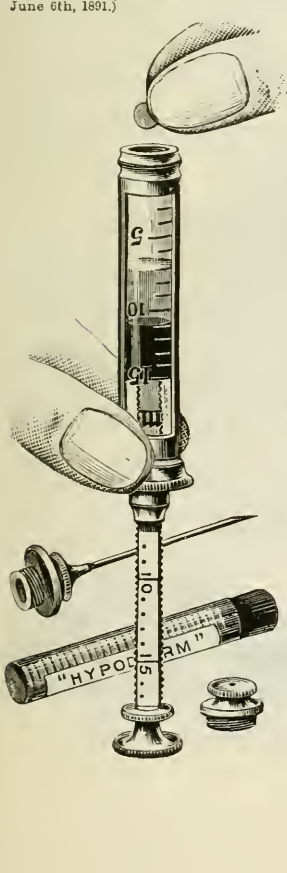
Hypoderms

Is the name ALLEN AND HANBURYS have applied to their **Compressed Tabellæ** of drugs for

HYPODERMIC MEDICATION.

FOR convenience in administering a great variety of drugs by hypodermic injection, our HYPODERMS will be found unsurpassed, and have within the last few months been still further greatly improved. The special properties of each active principle is carefully studied, and the varying degrees of solubility, deliquescence, etc., in each alkaloid or salt is treated individually, in order to secure an excipient in every case equally conducive to its ready solubility and preservation. Hypoderms dissolve in water almost *instantaneously* without the aid of *heat* or trituration. *No pestle and mortar is needed.* The dose is exactly known. The drug is in its purest form. Provided that the Syringe and Needle are kept quite clean, and that distilled water is used, no subcutaneous irritation or inflammation can follow their use. The Drug, being combined with a non-hygroscopic base, preserves its active properties unimpaired for any length of time.

The Lancet writes:—"The following advantages claimed for the 'Hypoderms' are found to be perfectly true—they dissolve easily and rapidly in a minimum of water without the aid of heat or trituration, yielding at once, if preferred, in the syringe itself a uniform solution of the drug; whilst, of still greater import, they contain, according to analysis, the exact amount of active ingredient they are stated to contain." (See rest of article for exact analysis of Hypoderms, June 6th, 1891.)



LIST OF HYPODERMS.

Acidum Sclerotinicum	1-2 gr.
Aconitina	1-2.0 gr.
Apomorphinæ Hydrochloras	1-10, 1-20 gr.
Atropinæ Sulphas	1-60, 1-100 gr.
*Caffeinæ Sodio-Salicylas	1-2 gr.
Cocainæ Hydrochloras	1-8, *1-4, *1-2 gr.
Digitalinum	1-100 gr.
{Digitalinum / {Morphinæ Sulphas	1-100 gr.
	1-8 gr.
Ergotinia	1-200, 1-100 gr.
Eserinæ Salicylas, *vide* Physostigminæ.	
Gelseminæ Hydrochloras	1-50 gr.
Homatropinæ Hydrobromas	1-200 gr.
Hyoscinæ Hydrobromas	1-200, *1-100 gr.
Hyoscyaminæ Sulphas	1-50 gr.
Hydrargyri Perchloridum	1-20 gr.
Morphinæ Sulphas	1-8, 1-6, 1-4, 1-3, *1-2 gr.
{Morphinæ Sulphas / {Atropinæ Sulphas	1-8 gr. / 1-200 gr.
{Morphinæ Sulphas / {Atropinæ Sulphas	1-6 gr. / 1-180 gr.
{Morphinæ Sulphas / {Atropinæ Sulphas	1-4 gr. / 1-140 gr.
{Morphinæ Sulphas / {Atropinæ Sulphas	1-3 gr. / 1-120 gr.
Morphinæ Tartras	1-8, 1-4 gr.
Physostigminæ Salicylas	1-100 gr.
Picrotoxinum	1-100 gr.
Pilocarpinæ Hydrochloras	1-10, *1-2 gr.
Quininæ Hydrobromas	1-2 gr.
Sparteinæ Sulphas	1-2 gr.
Strychninæ Sulphas	1-100, 1-60 gr.

Other strengths and formulæ are frequently added, and can be made to order. *Put up in small tubes containing 20 Hypoderms in each, except those marked with an asterisk, which contain 12, at 9d. each, or 7s. per dozen tubes.*

☞ The Hypoderms may be dissolved in the Syringe itself, ensuring absolute accuracy of dose, and saving of time to the practitioner.

Hypodermic Syringes and Cases in great variety. Any special form not in stock made to order. Fittings altered to suit individual taste.

FULL PRICE LIST ON APPLICATION.

Physicians desiring to prescribe HYPODERMIC TABELLÆ as manufactured by ALLEN & HANBURYS, are requested to use their term "HYPODERM," and to add the initials "A. & H."

Samples of Hypoderms sent post free to medical men on application.

Tabellæ

MANUFACTURED BY

Allen & Hanburys,

THYROIDIN TABELLÆ.

The continued success attending the new line of treatment in Myxœdema, Psoriasis, and allied diseases by Extract of the Thyroid Gland, will doubtless further extend the uses of this valuable therapeutic agent. Since 1891 a sufficient number of patients have been to all appearances so restored to health that it is allowable to believe that they can hardly relapse again. Thyroidin Tabellæ contain the active principles isolated from carefully selected glands, and readily disintegrate when swallowed. *The Medical Press and Circular* writes, 25th October, 1893:—"These are manufactured with the care and attractive form for which this firm is celebrated, and the results have answered our most sanguine anticipations."

ALLEN & HANBURYS' preparations of Thyroidin were introduced to the medical profession in the advertising columns of *The Lancet*, on February 25th, 1893. Careful study and long experience in the mode of preparation, under the guidance and direction of some of the leading members of the medical profession, have enabled them to produce Thyroidin, *i.e.*, the active principles isolated from carefully selected glands, *minus blood fat and inert tissue which readily decompose*, producing gastric disturbances, vomiting, etc., **and which give to some preparations on the market a most repulsive smell, especially when they have been kept for a short time.**

Three cases of Psoriasis were completely cured by the administration of Tabellæ Thyroidin (Allen & Hanburys').

See *The Lancet*, Jan. 6th, 1894, p. 19, "Five Cases of Skin Disease treated by Thyroid Gland," by J. F. Gordon Dill, Esq., M.A., M.D.

SPARINGLY SOLUBLE DRUGS.

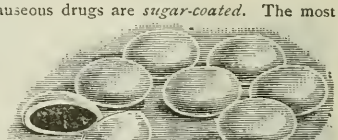
In the earlier days of the manufacture of Compressed Drugs it was abundantly evident that many doses passed unchanged through the system, the mass never being disintegrated. An important improvement in their manufacture was therefore introduced by ALLEN & HANBURYS, and now those drugs, such as *Sulphur*, *Sulphonal*, and others which are insoluble, or almost so, are made up in Tabellæ, which at once disintegrate on coming in contact with moisture.

The Editor, *Braithwaite's Retrospect of Medicine*, January to June, 1893, says:—"We would especially notice the Tabellæ Sulphonal prepared by Messrs. ALLEN & HANBURYS disintegrating process, by means of which the highly insoluble Sulphonal is made readily soluble, and so the inconveniences which not unfrequently arise from its delayed absorption are entirely prevented."

The Journal of Laryngology writes:—"It is this solubility of Messrs. ALLEN & HANBURYS' Compressed Tabellæ which makes them so distinct from other preparations in the market."

NAUSEOUS DRUGS.

In addition to the above improvement, all nauseous drugs are *sugar-coated*. The most fastidious palate can, therefore, find nothing to hinder the use of such bitter, though valuable remedies as *Aloin*, *Cascara*, *Quinine*, etc., in the tabellar form as manufactured by ALLEN AND HANBURYS, as they are swallowed before anything but a sweet taste can be perceived. The centres of these Tabellæ quickly disintegrate, when in contact with the moisture and warmth of the stomach, the pure drug being then put into the best conditions for absorption.



Sugar-coated Cascara Tabellæ.

☛ For List of Formulæ, etc., see next page.

TABELLÆ (Continued from preceding page).

Acidi Arseniosi, gr. 1/100 and 1/50.
Aconiti Tinct. *m.* i and v.
*Aloin, gr. 1/10, ¼ and ½.
*Aloin Co.
*Aloin Co. c. Cascara.
Ammon. Boratis, gr. v.
Ammon. Brom., gr. v and 10.
Ammon. Chlorid., gr. iij and v.
Ant-Acid.
Antifebrin, gr. iij.
Antim. Tart., gr. 1/120 and 1/16.
,, et Ipecac., aa. gr. 1/100.
Antipyrin, gr. v.
Atropin Sulph., gr. 1/100.
Belladonnæ Tinct., *m.* i, iij, v, & x.
Bismuth Carb. gr. v.
,, et Zingib.
,, et Sodæ
,, Sodæ et Zingib.
,, Subnit., gr. v.
Boracis, gr. v.
,, gr. v. et Cocain., 1/20.
Bronchiol.
Caffein Citrat., gr. i and ij.
,, Hydrobrom., gr. ij.
Calcii Sulphid., gr. 1/10, ¼, and ½.
Calomel, gr. 1/10, ¼, ½, and i.
Camphor, gr. i.
Camphor Co. Tinct., *m.* x.
Cannabin Tannat, gr. ij.
Carbo. Lig., gr v and x.
*Cascaræ Ext., gr. ij.
* ,, Comp.
Chloralamid, gr. v.
Chloral Hydrat., gr. v.
Chrysarobin, gr. 1/10 and ¼.
Cocainæ, gr. 1/20, 1/10, 1/8, 1/6, ¼, and ½.
Codeinæ, gr. ½.
Conf. Aromat., gr. v.
,, ,, c. Opio, gr. v.
Cupri Arsenitis, gr. 1/50.
,, Sulph., gr. iv.
Digestive (*see B. S. & G.*)
Digitalis Tinct., *m.* i and v.
Dover's Powder (*see Ipec. co. Pulv.*)
*Eastonii (each tab. = 3i syrup).
*Ergotin, gr. iij.
Euonymin, gr. ¼ and i.
Exalgine, gr. ½, ¾, i, and iij.
Ferri Arseniatis, gr. 1/16.
,, Redact., gr. i, ij, and iij.
*Ferri et Quin. Cit., gr. iij.
*Ferruginous, gr. v.
Gelsem. (Resinoid), gr. ¼ and ½.
*Guaiaci Co.
Gummi Rub.
,, ,, et Cocainæ, gr. 1/20.
*Hydrarg. c. Creta. g. ½, ¾, ¼, i, and ij.
,, Iodid. Rub., gr. 1/20.
,, ,, Virid., gr. ¼.
,, Perchlor., gr. 1/100.
,, Subchlor. (*see Calomel*)
Hydrastiæ Comp.
Hyoscyami, Tinct., *m.* ij and x.
Hypnal, gr. v.
*Ichthyol. gr. iiss.
Ipecac. Pulv., gr. 1/30, 1/20, 1/10, ¼ and v.
Ipecac. Comp. Pulv., gr. v.
,, Vini, *m.* i and v.
Kino, gr. i.
Kolæ, gr. v.
*Laxative.
Lithiæ Carb., gr, v.
,, Citrat., gr. v.
Mag. Carb. Pond., gr. v
,, ,, et Menth. Pip.
,, ,, et Zingib.
Mangan. Dioxid., gr. ij.
Menthol, gr. 1/10 and 1/20.
Morph. Mur., gr. 1/40, ¼, and ½.
,, ,, gr. 1/40, et Ipecac., gr. ¼.
Morph. Sulph., gr. ½, ¾, ¼, and ½.
Nitro-glycerin., gr. 1/100.
Nucis Vom. (Tinct.), *m.* i, v, & x.
Opii (Tinct.), *m.* ij.
Papain, gr. i, ij, iij, and v.
,, et Pepsin, gr. i, ij, & iij.
*Pepsin, gr. iiss.
*Peptonic.
Phenacetin, gr. v.
Pilocarpin. Mur., gr. 1/20.
Podophyllin, gr. ¾, ¼, and ½.
Potass. Bicarb., gr. v.
Potass. Bromid., gr. v.
,, Chlor., gr. v.
,, ,, et Boracis.
,, ,, ,, Cocainæ, 1/100, 1/20.
,, Iodid., gr. iij and v.
,, Nit., g. v.
,, Permang., gr. ij and iij.
*Quin. Bisulph., gr, 1/10, ¼, i, iij, iij, and v.
Resorcin (Resublimed), gr. v.
Rhei Co. Pulv., gr. v.
,, ,, Pil. B.P.
,, et Hyd. c. Creta, aa gr. iss, iiss.
,, et Zingib.
,, ,, et Sodæ.
Rhinitis.
*Saccharin, gr. ½.
Salicin. gr. v.
Salipyrin, gr. v.
Salol, gr. v.
Santonin, gr. ½.
* ,, et Calomel, aa gr. i.
Soda Mint.
Sodii Bicarb., gr. v.
,, Bromid., gr. v.
,, Chlorat., gr. v.
,, Dithiosalicylat., gr. iij & v.
,, Salicylat., gr. v. (Physiologically pure).
,, Salicylat. gr. v. (Natural).
,, Sulpho Carbolatis, gr. v.
Strophanthi, Tinct., *m.* ij and v.

SUBLIMATE.
,, COMP.

Sulphonal, gr. v.
Sulphur, gr. v.
,, Co., gr. v.
Tannin, gr. i.
,, et Capsici.
Terebene. *m.* i.
Thyroidin, gr. v.
Urethane, gr. iij and v.
Voice (*see Pot. Chlor. Borax et Cocain.*)
*Warburgii (Tinct. = *m.* 30).

* *Those of the above Tabellæ prefixed by an asterisk are* SUGAR-COATED, *and will in all cases be sent coated in this way (unless otherwise ordered).*

SUBLIMATE TABELLÆ for quickly preparing antiseptic Solutions for sprays and lotions of definite strength are sold in bottles (retail) at 9d. and 1s. 6d.

All Tabellæ sold in *bulk* and conveniently put up in Vinaigrette Bottles for the pocket, with name and trade mark (a Plough) on label, *at a uniform rate*, viz.: 1s., 2s. 6d., and 4s. 6d. each (retail); 8s., 21s., and 40s. per dozen (* except Saccharin, which are 9d., 2s., and 4s. (retail), or 7s., 21s. and 42s. per dozen.

☛ Physicians desiring to prescribe Tabellæ of Allen and Hanburys' manufacture can signify the same by the addition of the initials "A. & H." which, for convenience, Allen and Hanburys have registered as a Trade-Mark, thus:—

℞ *Tab. Thyroidin, gr. v., A. & H.*

Samples supplied to the Medical Profession on application.

ALLEN & HANBURYS Ltd., PLOUGH COURT, LOMBARD STREET, LONDON.

West End House—VERE STREET, CAVENDISH SQUARE, W.
Laboratories and Warehouse—BETHNAL GREEN, LONDON, E.
Cod-Liver Oil Factories—LONGVA & KJERSTAD, NORWAY.
Australian Agency—484, COLLINS STREET, MELBOURNE.

MEDICATED THROAT PASTILLES.

Manufactured by ALLEN & HANBURYS.

THESE Pastilles are introduced as an improvement on the ordinary hard, rough, and angular Lozenges, fragments of which often irritate the mouth when in an inflamed or ulcerated condition. Having as their basis Pate de Jujube, they are soft and demulcent in themselves, whilst their rounded form, and, in most instances, agreeable flavour make them valuable substitutes for the Lozenges now in common use.

1 **MORPHIA.** (1-40th of a grain.)
Adult dose: from 6 to 10 daily.

2 **IPECACUANHA.** Readily taken by children. These pastilles are of the same strength as the B.P. Lozenges.

3 **MORPHIA and IPECACUANHA.** (1-40th grain Morph. and ¼ grain Ipecac.)
Adults may take 1 every two, three or four hours.

4 **COMPOUND MORPHIA and IPECACUANHA.** A more active remedy than No. 3. (1-40th grain Morph., 1-5th Ipec., 1-5th Squills, &c.)
For Adults: 1 every two, three, or four hours.

5 **OPIUM and BELLADONNA.** An agreeable substitute for, and containing the same amount of, opium as the Lozenges of the British Pharmacopœia.

6 **ACONITE.** Each Pastille equivalent to half a drop of the B.P. Tincture.
Adult dose: 1 every two, three, or four hours.

7 **COMPOUND CAMPHOR or VOICE.**
Adult dose: From 3 to 6 or 8 at intervals during the day.

8 **CHLORATE of SODA.** May be taken whenever the throat is uneasy.

10 **BENZOATED VOICE.** Useful to public speakers, &c. Less active than the Compound Camphor.
1 or two may be taken shortly before any exertion of the voice.

11 **CHLORATE of POTASH.** A more agreeable form than the lozenge of the Pharmacopœia.
Dose: From 6 to 12 daily.

13 **RHATANY.** Astringent.
Dose: 6 to 12 daily, at intervals.

14 **TANNIN.** Astringent, and of the same strength as the Tannic Acid Lozenges B.P.

15 **CARBOLIC ACID.** Antiseptic and stimulant.
Dose: 1 to be taken every two, three, or four hours.

16 **BROMIDE OF AMMONIUM.**
Dose: 1 to be taken every two, three, or four hours.

17 **CHLORATE of POTASH and BORAX.** Containing these two useful remedies in combination.
Dose: 1 to be taken frequently.

18 **BORAX.** Dose: 1 to be taken frequently.

19 **CHLORIDE of AMMONIUM.** Expectorant. Dose: 1 to be taken frequently.

20 **GUAIACUM.** (2 grains of Guaiacum in each). Dose: 1 every two hours.

21 **IODOFORM.** (¼ grain of iodoform in ea.)
Dose: 1 every two, three, or four hours

22 **RED GUM.** Astringent.
Dose: 1 may be taken frequently.

23 **EUCALYPTUS.** Antiseptic & sedative.
Dose: 1 to be taken frequently.

24 **COCAINE.** (1-10th and 1-20th gr.). Sedative to the mucous membrane.
Dose: 1 every three or four hours.

25 **SEDATIVE and ASTRINGENT.** (Morphia 1-40th grain. Red gum 2 grains.)
Dose: 1 every two or three hours.

26 **CODEINE.** (1-8th grain Codeine.) Sedative. Dose: 6 may be taken during the day.

27 **COMPOUND EUCALYPTUS.** Red Gum, Chlorate of Potash and Cubebs.

28 **COMPOUND GUAIACUM.** (Guaiacum, Chlorate of Potash and Red Gum).

29 **COMPOUND RHATANY.** (2 grains of Extract of Rhatany and 1-10th grain of Hydrochlorate of Cocaine).
Dose: From 4 to 6 a day.

30 **BORACIC ACID.** (1 grain).

31 **RED GUM and COCAINE.** (Containing Red Gum and 1-20th grain of Hydrochlorate of Cocaine).

32 **RED GUM and CHLORATE of POTASH.** Astringent.

33 **RHATANY and CAPSICUM.** (2 gr. of Extract of Rhatany).
Dose: From 4 to 6 a day.

34 **TEREBENE.** (2 minims of Terebene).
Dose: From 4 to 6 a day.

35 **JABORANDI.** (¼ gr. Extract in each).

36 **PUMILIO PINE.** Stimulant to the throat. (1 minim in each).

37 **LETTUCE and BORAX.** (Ext. Lactucæ gr. ¼ pulv. Boracis. gr. ij. in each).

38 **COCAINE, CHLORATE of POTASH and BORAX.** For tickling and irritation of the throat.

39 **LACTIC ACID.** (2 minims of lactic acid in each).
Dose: 1 may be taken frequently.

40 **COCA.** (Containing 2½ gr. of Coca Ext. in each).
Dose: 1 every three or four hours.

41 **EUCALYPTUS OIL.** Antiseptic and stimulant.
Dose: 1 every two or three hours.

42 **KOLA.** Stimulating and tonic.
Dose: 1 may be taken frequently.

43 **MENTHOL.** (1-20th grain in each). Stimulant and antiseptic.
Dose: 1 when required.

44 **MENTHOL and COCAINE.** (1-20th gr. of each in a Pastille). Stimulant, antiseptic and sedative. Dose: 1 may be taken three or four times a day.

45 **MENTHOL and RHATANY.** (Menthol 1-20th grain. Ext. Rhatany grs. ij.). Antiseptic, stimulant and astringent.
Dose: 6 may be taken daily at intervals.

46 **MENTHOL and BROMIDE of AMMONIUM.** (Menthol 1-20th gr., Ammon. Bromide gr. i.). Antiseptic, stimulant and sedative. Dose: 6 may be taken daily at intervals.

47 **ALUM and TANNIN.** (Alum and Tannin, of each 1 gr.). Astringent.
Dose: 6 Pastilles may be taken daily at intervals.

48 **TANNIN, CAYENNE and BLACK CURRANT.** Astringent, stimulant and soothing.

These Pastilles are supplied in 1*s. boxes at* 8*s. per dozen, and in* 1*-lb. bottles at* 2*s.* 6*d. per lb. Bottles,* 6*d. each, returnable.*

A. W. REID & Co.,

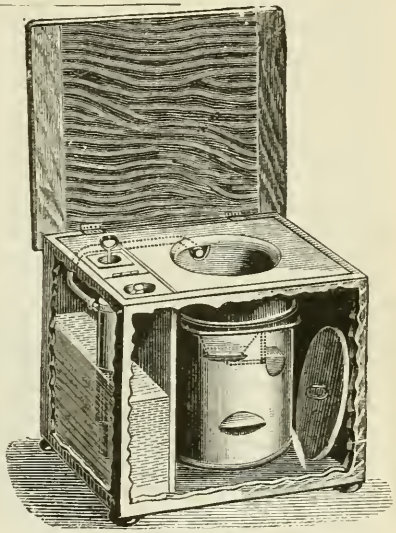
Manufacturing Sanitary Engineers,

69, ST. MARY AXE, LONDON, E.C.

REID'S
Portable Water Closets

FOR CLEANLINESS, COMFORT AND CONVENIENCE.

In Invalids' Apartments, Country Houses, House Boats, &c.



PRICES.	£	s.	d.
Reid's full size Improved Portable Water Closet, white basin, French polished mahogany case, with door in front	6	0	0
Do. in polished pine case, with mahogany seat, door in front ..	5	0	0
Mahogany Arms to either of the above, *extra*	0	12	0
Blue Printed Basins, *extra*	0	2	0

"ALDGATE" FLUSH DOWN PEDESTAL CLOSET.

Specially designed to work with a Syphon Cistern, compact in appearance, economical in price.

PRICES.	£	s.	d.
Plain white "Aldgate" Flush Down Pedestal Closet, polished mahogany or walnut seat, syphon cistern, brass chain, porcelain pull, and paper box, complete with brackets for cistern and seat	4	0	0
Do. printed basin .. *extra*	0	5	0
Do. printed inside and out, *extra*	0	10	0
Do. with raised ornamentation, as illustration, in plain white .. *extra*	0	7	6
Do. with self-rising seat, *extra*	0	10	0

Gold Medal awarded at the International Health Exhibition, London, 1884.

A Good Foundation is necessary whenever a stable building is to be erected. No matter how thick and strong the walls are built, if the foundation is not firm and deep the building is liable to speedily come to ruin. No building ever erected requires such a good foundation as that wonderful organism, The Body. "As the twig is bent, the tree's inclined," is an old and true axiom, and as the young body is nourished and fostered, a firm foundation will be laid, on which a vigorous and healthy framework will be built. Many a poor weakly, emaciated body is the direct result of wrongly fed childhood. The little life wants food which will develop in it blood, and bone, and brain, and muscle. Very few so-called Infants' Foods are worthy the name, and none are so rich in flesh and bone formers as **SCOTT'S OAT FLOUR.** It is the pure unmixed flour of Oats, the fibrous and irritating matter being all removed. Dr. H. C. BARTLETT says of it: ***"Your preparation is the best I have ever examined. It shows remarkable proportions of flesh and bone forming matter."***

SCOTT'S Nine First Class Exhibition Awards.

MIDLOTHIAN

OAT FLOUR.

UNEQUALLED as the perfect article of diet. Highly recommended and used by many eminent physicians.

SOLE MAKERS:

A. & R. SCOTT, LTD.,

28, Buchan St., GLASGOW; 375, City Road, LONDON, E.C.

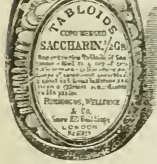
SOLUBLE "TABLOIDS" OF COMPRESSED DRUGS.

Prepared by BURROUGHS, WELLCOME & CO.

PURE.

PERMANENT.

PALATABLE.



PORTABLE.

Physicians throughout the world have welcomed our improvements, and are offering us every encouragement to continue our work, as is amply shown by the correspondence now proceeding in the *British Medical Journal*.

Successful practitioners now recognise the well-established facts that in the practice of medicine absolute accuracy of dose is of the greatest importance, and that the influence of the mind over the body is such that whims and fastidiousness of patients in respect to nauseous and palate-offending medicines cannot be ignored. It is well known that patients often deceive their doctor by secretly destroying or throwing away medicines which thus offend, or of which the appearance is repulsive, and this even in cases where the successful or unsuccessful action of the remedy is a matter of life or death; as a natural result, if the patient die or derive no benefit, the doctor, or the drug, or both, bear the blame.

"Tabloids" of compressed drugs in accurately divided doses greatly lessen the risk of error by nurses and patients, and afford an unchangeable and acceptable form of administration; at the same time these medicines are so compact and portable that patients travelling or attending to business, professional, or official duties can easily carry them in the pocket without the least inconvenience.

In prescribing "Tabloids" the greatest care should be exercised to prevent substitution; in fact, when our products are required it is wise to append the initials "B. W. & Co."

Official Text of Award conferred upon "Tabloids" at the Chicago Exhibition.

"For purity of the medicine used in compounding; for ready solubility of the coating and ingredients of the "Tabloids"; for the improved method of manufacture, and general appearance of the manufactured article."

For List of "Tabloids" see next page.

BURROUGHS, WELLCOME & Co.,
Manufacturing Chemists, Snow Hill Buildings, LONDON, E.C.
Cable and Telegraphic Address—"Burcome, London."

LIST OF "TABLOIDS" OF COMPRESSED DRUGS.

Aconite Tinct., 1 and 5 min.
Agathin, 4 gr.
Aloin, 1/10 gr.
*Aloin Compound (Anti-Constipation). (*Aloin 1/5 gr.; Belladonna Ext., 1/8 gr.; Strychnine, 1/60 gr.; Ipecac., 1/16 gr.*)
Alumnol, 4 gr.
Ammon. Bromide, 5 and 10 gr.
Ammon. Chloride, 3, 5, and 10 gr.
Ammon. Chloride with Borax.
Antacid. (Magnesio-Calcic). (*Calcium Carb. Precip., 2½ gr.; Magnes. Carb., 2½ gr.; Sodium Chlorid., 1 gr.*)
Antifebrin, 2 gr.
Antim. Tartrate, 1/50 gr.
*Antipyrin, 2½ gr.
Antipyrin, 5 gr.
Apomorphine Mur., 1/50 gr.
Arsenious Acid, 1/100, 1/50, and 1/20 gr.
Atropine Sulph., 1/100 gr.
Belladonna Tinct., 1, 5, & 15 min.
Benzosol, 5 gr.
Bismuth and Soda, 2½ gr. each.
Bismuth Salicylate, 5 gr.
Bismuth Subnitrate, 5 and 10 gr.
*Blaud's Pill, 4 gr.
*Blaud's Pill c. Aloin, 1/20 gr.
*Blaud's Pill c. Arsenic, 1/64 gr.
Blue Pill, 3 gr.
Borax, 5 gr.
Caffeine Citrate, 2 gr.
*Calcium Sulph., 1/10 gr.
Calomel, 1/10, 1/2, and 1 gr.
Camphor, Comp. Tinct. (Paregoric), 2, 5, and 15 min.
Cannabis Indicæ Tinct., 5 min.
Capsicum Tinct., 1 min.
*Cascara Sagrada Ext., 2 gr.
*Cascara Comp. (*Cascara Ext., Dry, 1 gr.; Euonymin, 1/2 gr.; Nux Vomica Ext., 1/16 gr.; Hyoscyamus Ext., Dry, 1/3 gr.; Iridin, 1/2 gr.*),
*Cathartic Comp., U.S.P. (*Ext. Coloc. Co. Pulv., 1/3 gr.; Ext. Jalapæ Pulv., 1 gr.; Hyd. Subchlor., 1 gr.; Cambogiæ Pulv. 1/4 gr.*).
Cerebrinin, 5 gr.
Charcoal (Pure Willow), 5 gr.
Chloralamid, 5 gr.
Chloral Hydrate, 5 and 10 gr.
Cinch. Tr., 30 min.
Cinch. Co. Tr., 30 min.
Cocaine Mur., 1 gr. [*see Voice.*)
Cocaine, with Potash and Borax
Copper Arsenite, 1/1000 gr.
Cretæ Aromat. cum Opio Pulv., 5 gr.
Cubeb and Belladonna Efferves.
Cubeb Comp. (*Cubeb Pulv., 2 gr.; Ammon. Chlor., 1/2 gr.; Ext. Glycyrrh.*).
Dermatol, 5 gr.
Dialysed Iron, 10 min.
Didymin, 5 gr.
Digitalis Tinct., 1 and 5 min.
Digitalin, 1/100 gr.
Diuretin-"Knoll," 5 gr.
Dover Powder, ¼ gr. and 5 gr.
*Easton's Syrup.
*Ergotin, 3 gr.
Eucalyptol Phosphate, 1 gr.
Euonymin Resin, 1/8 gr.
Exalgin, 2 gr.
Ferri Sulph. Exsic., 3 gr.
Gelsem. Semp. Tr., 5 min.
Guaiacum and Sulphur, aa 3 gr.
Hydrarg. Colocynth. c. Hyoscyamus (*Pil. Hydrarg., 2 gr.; Pil. Coloc. et Hyos., 4 gr.*).
Hydrarg. cum Creta, 1/3, 1/2, & 1 gr.
Hydrarg. cum Creta, 1 gr. with Pulv. Ipecac. Co., 1 gr.
Hydrarg. Iod. Rub., 1/16 gr.
Hydrarg. Iod. Vir., 1/8 gr.
Hydrarg. Perchlor., 1/100 gr.
Hydrarg. Subchlor., 1/10 gr. (*see also Calomel*).
*Hydrastia Comp. (*Hydrastin Mur., 1/4 gr.; Ergotin, 1/2 gr.; Cannabin Tannate, 1/2 gr.*).
Hydronaphthol, 3 gr.
Hyoscyam. Tr., 1 and 10 min.
Hypnal, 5 gr.
†Ichthyol, 2½ gr.
Iodic Hydrarg., 1/6 gr.
Iodopyrin, 5 gr.
Ipecac. and Opium, 1/4 and 5 gr. (Dover Powder).
Ipecac. Powder, 1/10 and 5 gr.
Ipecac. Pulv. cum Antim. Tart., aa 1/100 gr.
Ipecac. Vin., 5 min.
*Iron and Arsenic Comp. (*Quinine Bisulph., 1 gr.; Iron Hypophosph., 2 gr.; Arsenic.; Strych. Sulph., aa 1/50 gr.*
*Iron and Quinine Cit., 3 gr.
*Laxative Vegetable (*Res. Podoph., Ext. Hyosc., Ext. Taraxac., aa 1/4 gr.; Ext. Coloc. Pulv., 1 gr., Ext. Jalapæ Pulv., Res. Leptand., aa 1/2 gr.; Ol. Menth. Pip.*).
Lithia Carbonate, 2 gr.
*Lithia Co. (*Lithias Benzoas, 3 gr.; Sulphur Precip., 2 gr.; Quin. Salicy., 1/3 gr.*) (Mr. Hugh Lane)
Magnes. Carb. Comp. (Antacid) (*Pot. Bicarb. 2 gr.; Sodium Bicarb., 2 gr.; Magnes. Carb. Leris, 2 gr.; Sodium Chlorid., 3 gr.*).
Magnesium Sulphite, 5 gr.
Manganese Dioxide, 2 gr.
Menthol Comp. (*Sodium Bic. 3 gr.; Menthol, 1/2 gr.; Saccharin, 1/4 gr.*).
Morphine Sulph. 1/20 and 1/8 gr.
Nasal (Dr. Carl Seiler).
Nasal Alkaline (Effervescent). (*Borax, 5 gr.; Sodium Chlor., 5 gr.*).
Nasal, Antiseptic and Alkaline (*Sodium Bicarb., 5 gr.; Acid. Carbolic., 1/2 gr.; Borax, 5 gr.*).
Naso-Pharyngeal (*Sodium Chlorid., Borax, Boric Acid, Benzoic Acid, Menthol, Thymol, Cocaine Mur., Ol. Gaultheriæ*). (Dr Macnaughton Jones).
Nitro-Glycerine, 1/100 gr. (*see also "Trinitrine"*).
Nux Vomica Tinct., 1, 3 & 10 min.
Opium Tinct., 2, 5 and 10 min.
Opium, 1/2 and 1 gr.
*Pancreatin (*see "Zymine" "Tabloids."*)
Papain, 2 gr. (Dr. Finkler & Co.)
*Pepsin (Fairchild)
Pepsin, Bismuth, and Charcoal (*Pepsin, 1 gr.; Bismuth Carb., 2 gr.; Charcoal, 2 gr.*).
Pepsin, Saccharated, 5 gr.
*Peptonic, 3 gr. (*Pepsin, Pancreatin and Lacto-phosph. of Lime*, p. æq.).
*Peptonic (new process) ("*Zymine*," 1 gr., *Calcium Lactophosphate*, 1 gr., *coated with keratin. Pepsin Pure*, 1 gr., *is then added, and the complete "Tabloid" coated with pure white sugar.*)
Phenacetin (Bayer), 5 gr.
Pilocarpin Mur., 1/20 gr.
Podophyllin Resin, 1/4 gr.
Podophyllin Co. (*Podophyllin Resin, 1/6 gr.; Pil. Rhei Co., 2½ gr.; Ext. Hyos., 1¼ gr.*). (Sir William Moore).
Potass. Bicarb., 5 gr.
Potass. Bromide, 5 and 10 gr.
Potass. Chlorate, 5 gr.
Potass. Chlorate with Borax.
Potass. Iodide, 5 gr.
Potass. Nit., 5 gr.
Potass. Permanganate, 1 & 2 gr.
Potass. Salicylate, 5 gr.
Quinine Bisulphate, 1/2 gr.
*Quinine Bisulph., 1, 2, 3, & 5 gr.
Quinine Sulphate, 1, 2, 3, & 5 gr.
Reduced Iron, 2 gr.
Resorcin, 3 gr.
*Rhubarb Comp. Pil., 3 gr. (*Rhei Pulv., 1¼ parts; Aloes Soc. Pulv., 1 part; Saponis Pulv., 5/8 part; Myrrhæ Pulv., 5/8 part; Ol. Menth. Pip.*).
Rhubarb Comp. Pulv. (Gregory Powder), 5 gr.
Rhubarb and Gentian (Stomachic Comp.) (*Infus. Gentian Co., 2 fl. dr.; Infus. Rhei, 2 fl. dr.; Sodium Bic., 5 gr.; Ol. Menth. Pip., 1/2 glt.*).
Rhubarb and Soda, 5 gr. (*Rhub., 3 pts.; Sodium Bicarb., 2 pts.: Ginger, 1/2 part.*
Rhubarb, 3 gr.
Saccharin, 1/2 gr.
Salicin, 5 gr.
Salol, 5 gr.
Santonin, 1/2 gr.
Sodium Bicarbonate, 5 gr.
Sodium Dithio-salicylate, 4 gr.
Soda-Mint (or Neutralising "Tabloids") (*Sodium Bicarb., 4 gr.; Ammon. Carb., 1/8 gr.; Ol. Menth. Pip., 1/8 gr.*).
Sodium Salicylate, 3 and 5 gr.
Strophanthus (2 min. of Tincture in each).
Sulphonal, 5 gr.
Sulphur Comp. (*Sulph. Precip., 5 gr.; Potass. Bitart., 1 gr.*) (Sir A. Garrod).
Tannin, 2½ gr.
Tar, 1 gr.
Tar with Codeine (*Tar 1 gr. Codein, 1/8 gr.*).
Test "Tabloids" (for preparing Fehling's Solution).
Thirst
Thyroid Gland, 5 gr.
Tinct. "Tabloids." In oval bottles and bottles of 100.
*Tonic Comp. (*Iron Pyrophos., 2 gr.; Quinine, 1 gr.; Strych. 1/100 gr.*). [and 1/50 gr.
Trinitrine (Nitroglycerine), 1/100
Trinitrine and Amyl Nitrite.
Trinitrine Comp. (*Trinitrine, 1/100 gr.; Nitrite of Amyl, 1/2 gr.; Capsicum, 1/50 gr.; Menthol, 1/50 gr.*).
Urethane, 5 gr.
Voice (Potash, Borax, & Cocaine).
Warburg Tincture, 30 min. in ea.
Zinc Permanganate, 1/8 gr.
Zinc Sulphate, 1 and 10 gr.
Zinc Sulpho-carbolate, 2 gr.
Zingib. Fort. Tinct., 5 min.
†"Zymine" (Fairchild)
†"Zymine" Comp. (Fairchild) ("*Zymine*," 2 gr.; *Bismuth Subnit., 3 gr.; Pulv. Ipecac., 1/10 gr.*).

* May also be had sugar-coated. † May be had sugar or keratin-coated.

"HYPODERMIC 'TABLOIDS' ARE VERY SOLUBLE AND NOT AT ALL IRRITATING."—*The Lancet.*

b Aconitine Nitrate 1-260 gr.
a Apomorph. Hydroch. 1-10 gr., 1-15 gr.
a Atropine Sulphate 1-150 gr., 1-100 gr., 1-60 gr.
b *Caffeine Sodio-salicyl. 1-2 gr.
a Cocaine Hydrochlorate 1-10 gr. 1-6 gr., *1-4 gr., *1-2 gr.
b Codeine Phosphate 1-4 gr.
b Colchicin 1-100 gr.
b Cornutin Hydrochloride 1-60 gr.
b Curare 1-12 gr.
a Digitalin, Crystalline 1-100 gr.
b Ergotinin Citrate 1-100 gr., 1-200 gr.
a Eserine Salicylate 1-100 gr.
b Homatropin Hyd. 1-250 gr.
a Hydrarg. Perchlor. 1-60 gr., 1-30 gr.
b Hydrarg. Sozoiodol 1-4 gr.
a Hyoscine Hydrobrom. 1-200 gr., *1-75 gr., *1-10 gr.
a *Hyoscyamine Sulphate 1-80 gr.
b *Hyoscyamine Sulphate 1-20 gr.
b Morphine Bimeconate 1-8 gr., 1-6 gr., 1-4 gr., 1-3 gr.
a Morphine Hydrochl. 1-6 gr., 1-4 gr.
a *Morphine Sulphate 1-12 gr. 1-8 gr., 1-6 gr., 1-4 gr., 1-3 gr.
a Morphine Sulphate 1-2 gr.
Morphine Sulphate with Atropine Sulphate 1-12 & 1-250 gr., 1-3 & 1-200 gr., 1-6 & 1-180 gr., 1-4 & 1-150 gr., 1-3 & 1-120 gr., *1-2 & 1-100 gr.
a Nitro-glycerine 1-250 gr.
‡ Pilocarpine Hydrochl. 1-10 gr.
‡ Pilocarpine Hydrochl. 1-6 gr.
‡ *Pilocarpine Hydrochl. 1-3 gr.
b *Quinine Hydrobrom. 1-2 gr.
b *Sclerotinic Acid 1-2 gr.
b * Sclerotinic Acid 1 gr.
b Sodium Phosph. Co.
b *Sparteine Sulphate 1-2 gr.
b Strophanthin 1-500 gr.
b Strychnine Nitrate 1-15 gr., 1-10 gr.
a Strychnine Sulphate 1-150 gr., 1-100 gr., 1-60 gr.

Hypodermic "Tabloids" supplied in tubes of non-actinic glass, each containing 20 "Tabloids" (except those marked with asterisks, which contain only 12). Those marked *a*, at -/6 per tube; those marked *b*, -/8 per tube.

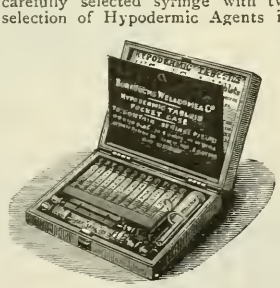
‡ The prices of Pilocarpine "Tabloids" 1-10, 1-6, and 1-3 gr., are 1/4, 2/1, and 2/6 per tube respectively.

The fact cannot be too pointedly emphasized that solutions for hypodermic injection should in all cases be prepared at the moment, and it is to enable this to be done with a minimum of trouble and risk that Hypodermic "Tabloids" were introduced. They are tiny discs, each containing an absolutely exact quantity of alkaloid,

combined with a perfectly soluble and innocuous base. It takes only a few seconds to produce a perfect solution, and we feel justified in saying that no other method for the ready preparation of solutions at the time of using offers the same advantages to the practitioner as the employment of Hypodermic "Tabloids." They may also be used sublingually with great advantage in some cases.

Hypodermic "Tabloid" Pocket Cases.

These Cases comprise complete Hypodermic Equipments, but at the same time occupy so little bulk that the presence of one of them in the pocket is scarcely felt. Each case contains a carefully selected syringe with two needles, a selection of Hypodermic Agents in "Tabloid" form, and a Mortar and Pestle for crushing the "Tabloids." The absolutely reliable character of Hypodermic "Tabloids," their accuracy of dosage, their physiological activity, and their freedom from irritative or acid salts, have been demonstrated countless times. The accompanying block represents the "Miniature" case, designed to hold in addition to the syringe and needles, fifteen tubes of assorted Hypodermic "Tabloids." It measures only $3 \times 2\frac{1}{4} \times \frac{3}{4}$ inches, and is the smallest and most compact case yet produced.



PRICE,
fitted complete, 14/-.

BURROUGHS, WELLCOME & CO.,
Manufacturing Chemists, Snow Hill Buildings, LONDON, E.C.
Cable and Telegraphic Address—"Burcome, London."

Ophthalmic Medication

List of Ophthalmic "Tabloids."

In ordering or prescribing it is necessary to quote the distinguishing letter only; e.g.—

℞ "Tabloidi" Ophthalmici, A (B. W. & Co.).

A	Atropia Sulph.	1-200 gr.
B	Atropia Sulph.	1-200 gr.
	Cocaine	1-200 gr.
C	Cocaine	1-20 gr.
D	Atropia Sulph.	1-20 gr.
E	Homatrop. Hydroch.	1-40 gr.
F	Eserine Salicyl.	1-600 gr.
G	Eserine Salicyl.	1-500 gr.
	Tropacocaine Hydroch.	1-100 gr.
H	Homatrop. Hydroch.	1-400 gr.
*J	Hydrarg. Perchlor.	1.1000 gr.
K	Pilocarpine	1-400 gr.
L	Tropacocaine Hydroch.	1-30 gr.
M	Pilocarpine	1-500 gr.
	Cocaine	1-200 gr.
N	Homatrop. Hydroch.	1-600 gr.
O	Homatrop. Hydroch.	1-240 gr.
	Cocaine	1-24 gr.
*P	Boracic Acid (perfumed with Otto of Rose)	6 gr.
Q	Duboisine	1-250 gr.
R	Zinc Sulphate	1 250 gr.
S	Scopolamine Hydrobro.	1-200 gr.

* For use in solution.

Supplied to the Medical Profession in tubes, each containing 25 "Tabloids," (except C. D. E. G. L. O. S., which contain 6 "Tabloids" only) at 6d. per tube.

Ophthalmic "Tabloids."

These are introduced to supply the long-felt want of a method of treating complaints and affections of the eye, which is easy of application, certain in effect, and free from objections from the patient's point of view. The frequent instillation of a solution is very distressing, and is often even injurious, since it disturbs the absolute rest which is so important a consideration in the treatment; besides, only a small quantity is retained, and that quantity is so diluted by the lachrymal secretion as to become very partial in effect. Ophthalmic "Tabloids" obviate these defects, and constitute a perfectly sterile and reliable mode of administering remedies to the eye. They are minute discs of the thickness of note-paper, extremely delicate in appearance, very soluble, and prepared with a perfectly innocuous and non-irritating basis. Each "Tabloid" holds a definite quantity of alkaloid. With two exceptions they are intended to be inserted within the conjunctival sac as they are, and when placed *in situ*, the eye being kept closed for a few minutes after insertion, they are immediately dissolved in the secretion and diffused over the surface of the eye.

Ophthalmic Case.

This case measures $2\frac{3}{4} \times 1\frac{3}{4} \times 1\frac{1}{8}$ inches, and contains a medicine dropper, Tabloid-holder, two camel-hair brushes, a small glass mortar and pestle, and nine tubes of Ophthalmic "Tabloids." Nothing so complete, practical, compact, and portable has hitherto been placed at the disposal of the medical profession in this direction. To practitioners in rural districts and other places remote from the chemist, the Ophthalmic Case must necessarily become a *vade mecum*, since, while it is so small that it can be carried in the pocket almost without its presence being felt, it comprises a representative selection of those agents generally called for in ophthalmic practice, with apparatus for applying them.

Supplied to the Medical Profession, fitted complete, 7s. 6d.

BURROUGHS, WELLCOME & Co.,
Manufacturing Chemists, Snow Hill Buildings, LONDON, E.C.
Cable and Telegraphic Address—"Burcome, London."

"THE KEPLER EXTRACT OF MALT IS SOUND AND RELIABLE."

—British Medical Journal.

The LANCET Reports:—"The Kepler is the best known and, in this country, the largest used Extract of Malt.

THE many and varied conditions of disease in which the Kepler Extract of Malt as a food is indicated, and the benefits which are to be obtained from its use, sufficiently explain the wide popularity it has attained. It is manufactured from barley, and barley only, and our perfected machinery and long experience have enabled us to obtain a product exhibiting all the nutritive principles of the grain intact. The main advantages of a good Malt Extract are that it is highly nutritious, readily assimilated, and rich in that important factor, diastase, which converts starchy food into maltose and other saccharine and easily digested substances. It is, consequently, an effective aid to digestion, and can be tolerated by the stomach when cod-liver oil alone would be out of the question. Freedom from coarse and irritating elements makes it the safest aliment in inflammatory conditions of disease; it is an admirable demulcent in irritable states of the throat, and in debilitated conditions generally it is unrivalled as a food and digestive aid.

Kepler Extract of Malt is advantageously administered to children in the later stages of infancy, when they are being partially fed on bread, gruels, and other farinaceous food, as it prevents the occurrence of digestive derangements so common to infant life, and increases the nutrient value of the food. It is as delicious as honey, as nutritious as cod-liver oil, and as assimilable as mother's milk.

A dessertspoonful of it added to a plate of warm gruel is quite sufficient to digest the starch. When cow's milk is given with a little Kepler Extract it does not curdle and disagree, as is so often the case. Many reports have been made by physicians showing that infants fed on milk so prepared progressed favourably when nothing else agreed.

The Kepler Extract possesses remarkable emollient properties. It also acts as a natural regulator of the bowels, and is useful in small doses in diarrhœa and catarrh of the bowels, as it is readily assimilated when other foods are rejected. In large doses it is an efficient aperient in constipation.

It is as distinct an advance in Therapeutics as was the introduction of Cod Liver Oil."

The Kepler Extract of Malt supplied to the Medical Profession by all Chemists and by the Wholesale Drug Trade, in ¾-lb. and 1½-lb. bottles, at 1s. 8d. and 3s. per bottle.

BURROUGHS, WELLCOME & CO., Manufacturing Chemists, LONDON.

NEW YORK: Rhinelander Building, Rose and Duane Streets.
MELBOURNE: 456, Collins Street, West.
PARIS: Pharmacie Centrale de France.
BRUSSELS: Chas. Delacre & Co.
TRIESTE: Pharmacie Serravallo.
VIENNA: The Feld Apotheke, Stefansplatz, 8.
BUDAPEST: Pharmacie Torok.

Cable and Telegraphic Address:—"BURCOME, LONDON."

"The KEPLER SOLUTION is an IDEAL FORM FOR THE ADMINISTRATION OF FAT."

—British Medical Journal.

REAL. TESTIMONY

Medical Men who have tried it personally and in their own families accord to it the highest praise.

THE value of Cod-liver Oil as a tissue-forming, force-producing, and nutritive food was formerly so greatly impaired by the difficulties attending its administration that it is greatly to be wondered at that it did not altogether go out of use. And this is also remarkable on another account. Plain Cod-liver Oil has been shown to be assimilated to such a partial extent that the unpleasant and nauseating effects produced by taking it into the stomach must have been scarcely compensated by the benefit derived. But even in the early days of its use its ultimate important position as a medicinal agent was foreseen, so pharmacists set about trying their best to devise, in the first place, methods of rendering it as pure as possible, and in the second place, means of sophistication so as to cover the nauseous taste, to render it comparatively palatable, and to enable as large a proportion of it as possible to be absorbed into the system.

The former of these objects was not specially difficult of attainment, but the latter problem was for years tackled in vain. It was attempted to emulsify the Oil with gums, alkalies, &c., but although preparations so treated were less objectionable to swallow, when taken into the stomach the oil globules were found to coalesce through the warmth of the body, and the consequent eructations were as bad as when the oil was administered *per se*. Still, for a long time emulsions held the field, and were regarded as the most practical method of preparing Cod-liver Oil.

But the Kepler Solution of Cod-liver Oil in Extract of Malt was the final "solution" of the difficulty. The reason for past failures was at length revealed: Cod-liver Oil had been treated as a drug, whereas it should have been treated as a food. It was at length apparent to us that the only rational method of taking it was with another food, as oils and all other fats are taken, and we resolved to test the capabilities of the Kepler Malt Extract as a medium for the administration of Cod-liver Oil. Our experiments were entirely successful, since it was found that by centrifugal motion induced by machinery Cod-liver Oil was completely dissolved in Extract of Malt, the presence of the latter materially aiding the assimilation of the Oil and at the same time thoroughly masking its unpleasant taste and removing the possibility of the production of nauseous effects.

The Press speaks of it as "The most palatable and easily digested of any form of Cod Liver Oil."

Kepler Solution of Cod-liver Oil in Malt Extract supplied to the Medical Profession by all Chemists and by the Wholesale Drug Trade, in ¾-lb. and 1½-lb. bottles, at 1s 8d and 3s each.

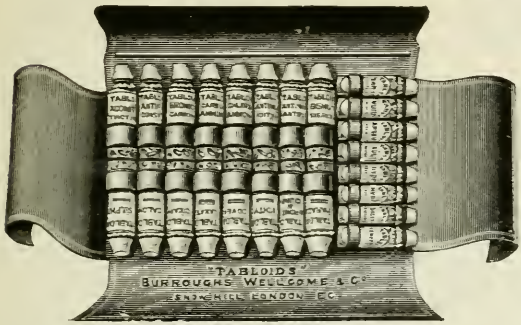
BURROUGHS, WELLCOME & Co.,

Manufacturing Chemists, Snow Hill Buildings, LONDON, E.C.

Cable and Telegraphic Address—"Burcome, London."

THE COUNTRY PRACTITIONER AND "THE NEW PHARMACY."

See "*British Medical Journal*," Nov. 3, 1894, page 1013.



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Outside measurements, when closed, 8½ × 6 × 1½ in. Contains sixteen 3-dr. and eight 1-dr. phials. Price, fitted with "Tabloids," from 35s.

The medical man whose practice lies in a rural district extending over an extensive area, far removed from a chemist, has hitherto found it a great trouble to promptly and adequately provide his patients with medicines. He must either require them to send long distances, or he must convey with him on his rounds such an assortment as he is likely to want. But a sufficient quantity of the old-fashioned forms of medicine—powders, mixtures, &c.—is extremely cumbrous and awkward, if not completely impossible, of transit; and it is in this respect that the advantages of "Tabloids" become so manifest and conspicuous. It may fairly be claimed that the "Tabloid" system of preparing drugs has effected a complete revolution in the fitting and equipment of Medicine Cases and Chests. Those supplied by us, of which the accompanying illustrations will give some idea, are eminently portable, practical and useful, and bring about great saving of time, trouble and space. By using "Tabloids," everything necessary is in the smallest possible bulk, and, besides this, may confidently be relied upon to produce in full measure the desired physiological effect. The virtues of "Tabloids" themselves need not be commented on here, since they are sufficiently well known and recognised; suffice it to say that for portability, ready solubility, prompt and unimpeded action, absolute purity, moderate cost, convenience in form, and accuracy in dosage they have received testimony from the medical profession in every part of the world. They do away with the necessity for weighing and measurement, and this fact alone is an advantage which cannot be over-rated.

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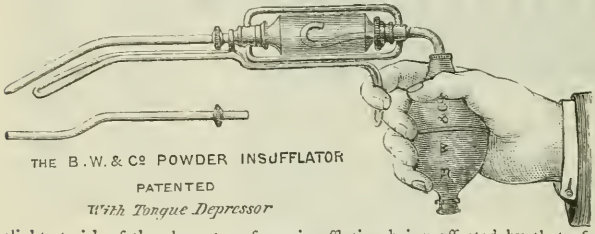
(*PATENT.*)

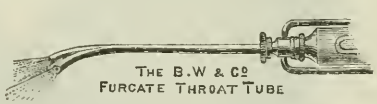
THIS new instrument presents conspicuous advantages over all the old forms. It is neat, light, highly finished, and altogether the most satisfactory form yet offered for the application of dry powders by insufflation to the nasal and oral mucous surfaces, and to sores, abscesses, &c., on the outer skin.

The advantage of having interchangeable cylinders to hold different powders is one which will be greatly appreciated in practice. The delay in emptying and refilling old-form reservoirs—not to speak of the great difficulty, frequently met with, in dispelling the unpleasant odour of a preceding insufflation (*ex grat.* Iodoform)—was an objection levelled at insufflators of an earlier type. The exchange of one powder for another (such as is often desirable either in the same or in a different case) is the work of a moment, and there is not the slightest risk of the character of one insufflation being affected by that of another.



THE B.W.& Cº POWDER INSUFFLATOR
PATENTED
With Tongue Depressor

As will be seen from the sketch, the method of handling the insufflator is natural and easy, so that the operator is enabled both to hold the instrument and to bring about delivery of the powder with one hand, leaving the other hand free—a very appreciable advantage. Again, each instrument is provided with two forms of delivery tube, which are easily and quickly exchangeable. A very effective attachment for depressing the tongue completes the instrument. It is to be noted that the tongue depressor as designed for use in connection with this insufflator is of a unique pattern and easily detachable.



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In accordance with a suggestion from Dr. Brownlow Martin (who speaks highly of the new instrument in his recent work, "Diphtheria, and its treatment by Magnesium Sulphite") we have introduced an improved tube having a furcate end, the advantage of which will be at once obvious to medical practitioners, the insufflation being delivered in two nebulæ proceeding at an acute angle.

The B., W. & Co. Powder Insufflator, with One Cylinder	**10/-**
Tongue Depressor for same	**2/6**
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Case to contain Two or Three Powder Cylinders	**1/6**
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The B., W. & Co. Furcate Throat Tube	**2/-**

Can be obtained from all first-class Pharmacies, and wholesale Drug houses.

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EMOL-Keleet is a purified, natural, emollient, absorbent, dusting powder of impalpable texture, as soft as down to the touch. It in no way resembles the ordinary and unstable compound, astringent, or starchy absorbent powders.

Chemically, Emol-Keleet may be said to be closely allied to superior qualities of Fullers Earth, yet it is quite distinct from the usual varieties of that substance, in that it contains a considerable percentage of Steatite (known commonly as soap stone as well as of Silica, Alumina, traces of Calcium Salts, and an appreciable trace of Ferrous Oxide.

The delicate flesh-pink tone of Emol-Keleet—one of its much-admired characteristics—is due to the presence of Ferrous Oxide, while its soft silky feel is largely occasioned by the presence of Steatite.

Emol-Keleet, though comparatively new to the medical profession, has been known for some little time to a limited circle, and has been the subject of investigation by competent hands, both chemico technically and therapeutically but it was not brought specially to the attention of the profession until the 1893 meeting of the British Medical Association, at Newcastle-on-Tyne, when an exceedingly interesting paper was read during the session of the Dermatological section, by the president, Dr. Allan Jamieson, of Edinburgh. The interest aroused by the therapeutic notes given in his paper by this distinguished authority on skin diseases, brought Emol-Keleet prominently into view, and a brief recapitulation of the points of the paper referred to, may be useful.

It was shown that *as dusting powder*, Emol Keleet, a perfectly innocuous and inoffensive material, is therapentically superior to any previously known. When placed upon the tongue—one of the simplest and yet most severe tests as to utter impalpability which can be applied to a powdered substance—there was an entire absence of any sensation of grittiness.

It was noticed also, as a remarkable property of this powder, that when a small quantity, say a teaspoonful or so, was added to a basinful of hard water—such as one frequently meets with in limestone areas—it effected an immediate softening influence. Used in this manner with warm water, Emol-Keleet acts as a natural soap, cleansing the skin thoroughly, and at the same time leaving it soft and smooth.

The learned president pointed out as evidence of the activity and effect of this compound that the workmen engaged in its purification found that their previously horny palms became so much so toned by continued contact with it, that they could not use their hands for rough work without incurring severe friction. This fact led Dr. Jamieson to try the effect of Emol-Keleet upon horny accretions encountered in some states of keratosis of the palms and soles. When mixed with water to the consistence of a paste, and painted on pretty thickly — evaporation being prevented by covering the whole area with oiled silk, gutta-percha, or other impervious tissue—it was found that the epidermal masses became softened and loosened, and could actually be peeled off painlessly, eventually leaving the part so treated soft, smooth, and of a natural pinkish hue. In view of this experience, it is probable that Emol-Keleet will have a very wide sphere of usefulness in the treatment of many skin affections both local and constitutional, for it possesses many qualities which will be highly appreciated by dermatologists.

Used as an ordinary dusting powder, it was found to possess anti-pruritic properties and relieved very markedly the itching of the skin now and then complained of in urticaria or during the eruptive period of measles. The absorbent qualities of Emol-Keleet with its mild astringent tendency, stamp it as a perfectly harmless and absolutely unequalled dusting powder.

In moist or weeping conditions of the epidermis, such as one encounters so often in eczematous or erythematous affections, the application of Emol-Keleet is followed by beneficial effect. From the dermatologist's point of view Emol-Keleet is a most useful addition to the list of remedial agents used in the treatment of cutaneous diseases.

Supplied in metal boxes. Price to the profession, 9d. each.

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These "Tabloids" are prepared from perfectly pure leaves, treated by a special process, which renders them less injurious to the health than ordinary teas.

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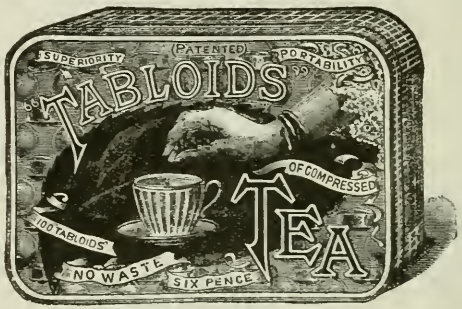

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PRODUCE A DELICIOUS CUP OF PURE TEA IN ONE MINUTE.

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By using Tea "Tabloids" the consumption of Tea in the household, workshop, or wherever it is employed is easily controlled. There is no waste, as all the uncured and useless part of the leaf is removed.

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DIRECTIONS.—If making in a Cup, put two or more "Tabloids" (according to strength required) into a clean cup, fill up with freshly boiling water, stir for a couple of seconds, and allow to settle. If the cup be covered during infusion the result will be better. If using a Tea-pot, put in as many "Tabloids" as may be necessary—two or three for each cup—according to taste. Pour on freshly boiling water to the quantity required. Stir for a couple of seconds and allow to stand for a minute or two. Pour out in the ordinary way without shaking.

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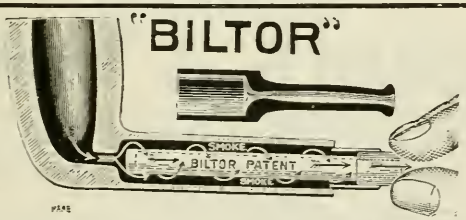

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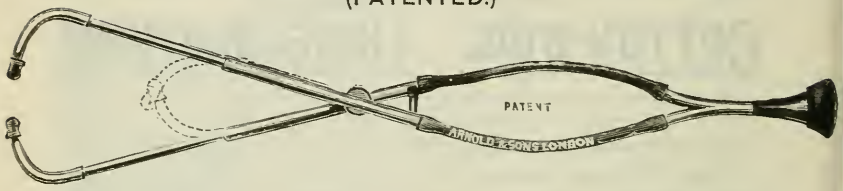

Extract from **The Lancet**, September 8th, 1894:—The accompanying illustration shows a very portable binaural stethoscope It possesses the following advantages—viz., being telescopic it fits into a very small compass; the metal tubes are made oval to prevent turning round; the metal is the same colour throughout and does not corrode; the ear pieces are made of india-rubber, and are therefore softer for the ears; and the chest-piece has an india-rubber air-pad cover. When folded it fits—and in a very small compass—into a leather case. The Patentees and Makers are Messrs. ARNOLD & SONS, of West Smithfield, London.

Vide THE BRITISH MEDICAL JOURNAL, Nov. 3rd, 1894.

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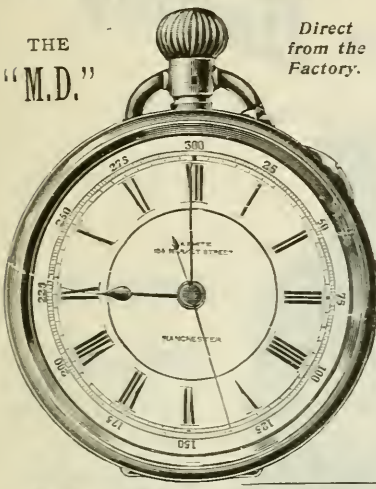

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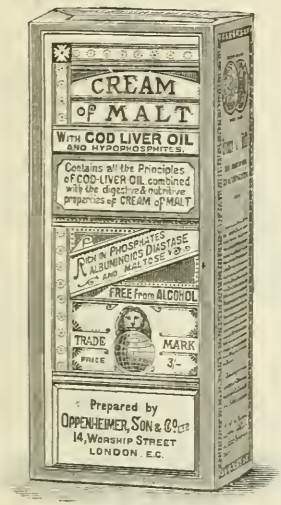
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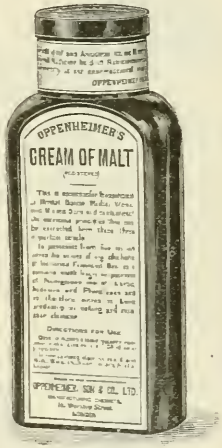

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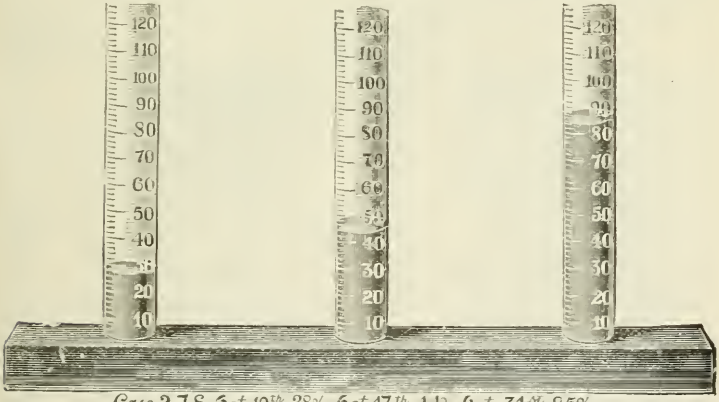

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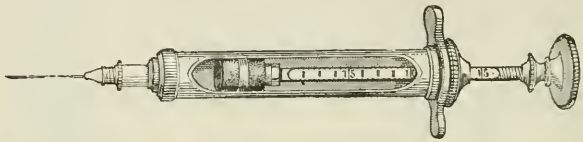

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PREFACE.

In introducing the present volume to our readers and reviewers we feel that we are addressing friends who have for thirteen years encouraged our efforts to make the "Medical Annual" worthy of the confidence and approval of the Medical Profession, and who have always shown a generous consideration for the difficulties of the task we have undertaken.

The support afforded us by Physicians and Surgeons in all parts of the world has greatly lightened our labours, and our chief trouble during the last few years has been to keep the work within such reasonable limits as to render it a handy work of reference without sacrificing its completeness. This has necessitated some increase in the work undertaken by the editorial staff, but has not required any alteration in the arrangements or general plan of the book.

We prefer, as far as possible, to bring those who are advancing the science of medicine in any direction into direct communication with our readers, and we are not, therefore, governed by any consideration of nationality or school in selecting our contributors.

It is with particular pleasure that we see members of our profession, widely separated by land and sea, working together with the common object of helping the practitioner in his daily work, and we feel that our readers will join us in welcoming them, and support us in the view that breadth and impartiality are essential to the character of the "Annual" as a scientific work, and due to those who look to it for information.

We may again remind our readers that in the case of the more important and practical communications addressed to the Medical Press during the year we are always glad to receive, direct from their authors, a short statement of the views advanced, to be inserted under the writer's name; or we are ready to submit to them an abstract, made by our editorial staff, for their correction. It not infrequently happens that an author has occasion to modify a statement or add a confirmatory fact after the publication of his original article, and it is important both to author and readers that no effort should be spared to avoid placing, in a work of permanent reference, a statement which may stand in need of correction.

The treatment of Diphtheria by Anti-toxin is without doubt the most important advance made in medical science during the year, and the most recent reports show that it is likely to prove a discovery of the first importance. The desire of Dr. Armand Ruffer to afford us the latest information respecting his investigations on the subject, rendered it impossible to insert his article in its proper place in the volume, and it will therefore be found on p. 525.

It is with deep regret that we mention the omission of the article on "Endocarditis in Children," which was promised by the late Dr. Octavius Sturges. We had looked forward to his valued co-operation both in the present and future volumes of the "Annual," but soon after the promise was made the profession had to mourn the loss of one of its most talented members.

The "Medical Annual" Offices,
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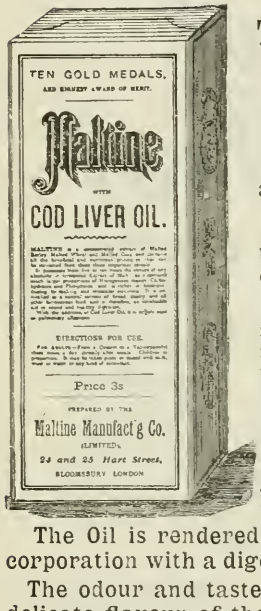

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of the period the animals were killed, and the muscles of the two sides carefully removed and weighed; portions were also hardened and examined microscopically. The modes of stimulation were as follows: (1,) Induction coil current, groups of shocks lasting each for one second, and followed by one second of interval; (2,) Galvanic battery current of 2 milliampères, with the same periods of stimulation and repose; (3,) Static sparks of 2 to 3 millimètres repeated every two seconds; (4,) Tetanisation of muscles for four minutes by means of an induction coil, without intervals of repose; (5,) Steady galvanic battery current for four minutes without intervals of repose. The results showed a gain of 40 per cent. in weight on the stimulated side with (1) the rhythmic induction shocks, and of 18 per cent. with (2) the rhythmic battery current. The effect of (3) the static sparks was *nil*; the prolonged tetanisation (4) caused a loss of weight; the prolonged steady battery current (5) a slight increase in weight. Adhesions had been formed between the skin and the muscle at the points of application of the electrodes in this last (5). The gain in weight was due to a true growth of the muscle; the loss was accompanied by histological evidence of damage to the muscle fibres. The author concludes that the most advantageous mode of promoting the growth of muscle by electricity is to use an induction coil, and to arrange the periods of contraction and repose of the muscle so as to approximate to the conditions of a muscle during the performance of rhythmic gymnastic movements—namely, about thirty periods of contraction and thirty of rest per minute, prolonged tetanisation being distinctly hurtful.

Exophthalmic Goitre.—Rockwell relates his experience in the treatment of forty-five cases of Basedow's disease—dating from 1876—holding that the prognosis in this disease is better than is generally believed. Fourteen of these cases either fully or approximately recovered, twenty-seven were benefited, some of them in very great degree, others only slightly, while three were in no way benefited.

Some of these cases that were much benefited relapsed and received further treatment with good results, while others have been lost sight of and their subsequent history is unknown. The electrodes used are of sculptors' clay enabling him to apply as high as from 20 to 60 milliampères to the neck. If his results in the treatment of this disease have been exceptionally good, he attributes it to the fact that he has not confined his efforts to the use of drugs and the galvanic current alone, but has in many instances combined with these methods the most thorough and persistent treatment by general faradization. While he considers electricity of more importance than any other

remedy in the treatment of this disease, yet in many cases the most rigid and conscientious observance of certain fixed rules in regard to eating and drinking, and the avoidance not only of excess in every department of mental and physical hygiene, and even the repression of ordinary and legitimate emotions and passions, become very essential.

Galvanization of the Brain.—Hare believes that the benefit following galvanization of the brain is due to reflex influences and not to the direct passage of the current through the brain substance. He supports this view by some experimental observations which seem to him to indicate that when a current is passed between the electrodes it does not pass through the brain substance at all, but in the direction of least resistance, namely, the scalp. This he thinks was proved experimentally by placing electrodes, one on the occiput and the other on the forehead of a large dog, and arranging a milliampère meter in the circuit. The amount of current indicated in one experiment was 5¾ milliampères. The same dog was then trephined and a needle connected with one pole of the circuit was plunged into the brain substance, the other terminal being placed as before. It was now observed that the amount of current passing was only 3¾ milliampères. In other words, the resistance, according to Hare, is less in the circuit formed by the two wet sponge-coated electrodes and the scalp, than in the circuit formed by the needle, brain substance, bones and two layers of scalp with the other sponge-coated electrode.

Dr. Deve, on the contrary, reports the following experiments, which seem sufficient to prove that electricity acts perfectly within the central portion of the brain. Upon the head of animals about to be killed two electrodes were placed at the end of the biparietal diameter, and a current of 60 milliampères passed between them. Two galvanopuncture needles, insulated to within 5 millimètres of their points were connected with an astatic galvanometer, thus forming a secondary circuit. This done, these needles, now positive and negative, were plunged into the scalp in the following positions. The primary current was 60 milliampères :—

(1,) They were plunged into the bi-polar line 5 centimètres from each electrode, when the metre of the secondary circuit, after one minute, registered 14 milliampères.

(2,) They were separated from each other on this line 4 centimètres, 1 to 11 milliampères showing.

(3,) The distance between them was doubled, 1 to 5 milliampères showing.

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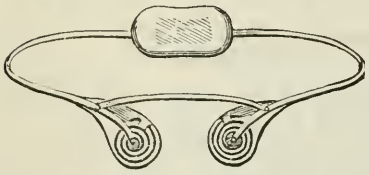

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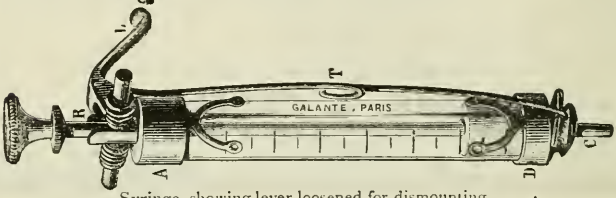

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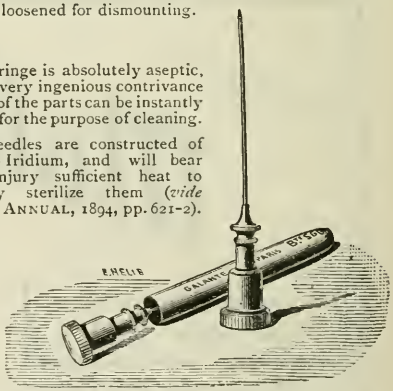

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THE MEDICAL ANNUAL.

PART I.—THERAPEUTICS.

The Dictionary of New Remedies,

AND REVIEW OF THERAPEUTIC PROGRESS FOR 1894.

"OF *irrational* Therapeutics we are at length free." This is the hopeful pronouncement made by Dr. P. H. Pye-Smith in an address on Rational Therapeutics delivered before the Hunterian Society of London. "By irrational therapeutics," the author means "curing, or attempting to cure by magic, by the method of sympathy, by the system of signature, by swallowing prescriptions, by hypnotism, by pads of bitter herbs laid on the stomach, by wearing inert girdles round the body, or by travelling long distances in order to bathe in warm water or to drink solutions of common salt."

When the history of the present era of medicine comes to be written, it may be suggested that Dr. Pye-Smith need not have gone back to the age of mystery and of supernaturalism to have discovered instances of irrationalism in therapeutics. The doctrine of signatures belongs to a comparatively modern period of medical history, and was held not less strongly, nor asserted less dogmatically than any other theory that finds general acceptance at the present moment. According to this doctrine, the use of any herb for the cure of disease, which neither in its leaf, flower, nor root bore resemblance to the organ of the human body for the cure of which it was administered, belonged to "irrational therapeutics." There are many common herbs which bore a great reputation in the cure of disease, but which were rejected from the Pharmacopœia because they did not fit themselves into a place in this particular theory, and it is curious that although the theory has been forgotten, these rejected medicaments have never been restored to their place in medicine, although their reputation has been kept alive in folk-lore. The irrational method of therapeutics of to-day may be considered most rational in the next decade, while many of these methods which the author quotes as illustrations of rational therapeutics may be set aside with a sneer by some future Hunterian

lecturer. Thus, "hypnotic suggestion" has occupied, and still occupies the attention of physicians who are entitled to respect, and whether the method will obtain a definite place in therapeutics or not is one which it is perhaps too early to decide. "The travelling of long distances in order to bathe in warm water, or to drink solutions of common salt," may be irrational to the mind of the author. But he is speaking of a form of treatment which had endured for centuries before Hippocrates was born, and which, through all the changes of view which have taken place among the professors of the healing art, has continued, and still continues in greater popularity than at any other period in medical history. True, it has been proved scientifically that the mineral water is not absorbed by the skin during the bath, and therefore the water can do no more good than ordinary water artificially heated. Theoretically Pye-Smith is right, but the simple assertion that the practice is irrational does not explain why rational men of all ages and all countries believe in the efficacy of mineral baths, or account for the cures annually effected of patients who have tried all previous methods in vain.

The evidence rather points to an error in our scientific theory. Lately we have had evidence that one of the speedier ways of producing the physiological effects of kreasote is by painting a watery solution of it upon the skin. It is suggested that it is the vapour which finds its way through the skin, and probably this is so. Is it not possible then, that mineral waters differ from ordinary "solutions of common salt," and that nature presents some of the mineral ingredients in a form more approaching a vapour than a solution, and that this may find its way through the skin and reach parts of the human economy which are not affected by the use of saline solutions given by the mouth, because it is the business of the liver to reject and throw them back into the system. If we suppose that this was found to be fact, it would no longer be considered irrational to use the hot springs which nature has provided throughout the world for some good purpose or another, and scientific fact and common experience would go hand in hand, instead of in the strained relations which at present exist. Dr. Pye-Smith tells us that "unfortunately the majority of sick people throughout the world are still irrational on this point."

The author also includes under "irrational medicine," attempting to cure all diseases by formulæ or theoretical general principles. "There can be no 'system' of therapeutics. All such systems, past, present, or to come, are demonstrably irrational, not because the allopathic, antipathic, or homœopathic hypotheses, the stimulating

Brunonian system, or the infinitesimal of Hahnemann, are wrong answers to a question on which we hope one day to find the right one, but because they are blundering answers to a question which has none."

Without prejudging the question as to the possibility of the art of therapeutics becoming a science, a legitimate objection may be taken to this specimen of a line of reasoning which prevails too commonly in the discussion of medical questions. The assertion of impossibility is not an argument which has a proper place in science ; it involves the premise that existing knowledge is complete, and free from error.

By using the facts which we know, or think that we know, we can always prove demonstrably that some other thing is "impossible," but one small addition to our knowledge will destroy the whole basis of our calculation. "Medicine always has been and always must be an art, not a science," is the first sentence of Dr. Pye-Smith's address. The same expression of opinion has been frequently made before. We should like to interpolate the words, "in the light of our present knowledge," because if we comfortably settle down to the belief that therapeutics must always remain in a state of chaos, if we have beforehand made up our minds to regard as irrational all physicians who endeavour to bring the facts within our knowledge into a definite system, who try, however unsuccessfully, to elevate the art of medicine to a science, we are hindering rather than advancing an end, which even those who regard it as unattainable, devoutly wish for.

It is a pleasure to find that Dr. Pye-Smith puts in the fore-front of "Rational Medicine" the art of prophylaxis, and sanitation, and regards as "eminently rational," such remedies as "exercise and fresh air, clothing and climate, the intelligent use of baths, of heat, of cold, and of electricity, and by regulation of the patient's food, and drink, and sleep." "I shall," he says, "speak only of the rational use of drugs, which to most patients, and I fear to a few doctors, is the whole art of medicine."

We think the author will agree with us in thinking that it is not altogether the fault of doctors and patients that the use of drugs is regarded as the whole "Art of Medicine." The whole authority of the schools has been used to inculcate this view. Persecution has been meted out to those who were the first to throw aside the resources of polypharmacy and trust for the cure of disease to the simpler agents of heat and cold, exercise and judicious diet.

Even at the present moment, no instruction is given in the medical schools as to the "intelligent use of baths" or "exercise."

We remember the surprise with which a former President of

the Royal College of Physicians regarded the question of a nurse as to whether she could continue the exercise which had been ordered for a patient by the medical attendant.—"Exercise, my good woman, why the patient cannot leave her bed."

Even in such a simple matter as "exercise" the teaching of the schools is far from complete, and consequently the daily exercise of a bed-ridden patient would be set down as among the impossibilities of the future of the therapeutic art.

Even in the use of "heat and cold" the teaching goes no further than the fact that cold may be used to reduce the temperature of the body, and that heat increases it. Hippocrates, after careful observation of the effect of heat and cold, suggested its use in reverse order—cold to raise the temperature of the body, and heat to reduce it. Here we have an antagonism of observed facts, the one directly the opposite of the other. But both are true. We may use either heat or cold to raise or lower the temperature of the body.

It is a part of the routine of therapeutic discussion to insist that what is paradoxical is also absurd. We are apt to forget that the paradox arises from an incorrect statement of facts.

When we say that heat produces one particular action upon the human body and cold produces another, we are stating only half facts; both produce effects according to the method and to the quantity of their application, and these effects differ more widely than those produced by drugs of widely different classes. Can it be expected therefore that we shall be able to reduce the more complex action of drugs to anything approaching a system or a science, until we have fully realized that the effect of the simplest agent is not that of some inherent quality possessed by it, but to the quantity of it necessary to either stimulate or exhaust a vital function.

The author includes among rational remedies those "which may be termed physiological, *i.e.*, emetics, purgatives, diuretics, hypnotics, sialogogues, and so on." It may be said of any one of the drugs included under these names that they are capable of exercising effects directly the opposite of that which their classification implies, and that in no case does the word purgative, emetic or sialogogue imply the full quality or capacity of the drug. The opium eater does not take opium as a hypnotic, but as an agent which temporarily stimulates the mental and physical powers. It is the "emetics" which are of very frequent service in checking vomiting, the purgative in checking diarrhœa, but they must be used in doses proportionate to the effects required of them.

Are such facts simply accidents? Is there no natural or physiological cause for them? Or is it, that nature, acting on definite laws in all other matters, is only paradoxical when medical treatment is concerned? It is this which appears to us to be the strongest argument in favour of the possibility of law and order in therapeutic science. There must always be cases where cure is out of the question, and where the only business of the physician is to relieve symptoms. Here the great resources which we possess in respect to remedies of a palliative character serve us in good stead. But when we come to that attention to nature which the word therapeutic implies, to the restoration of the enfeebled organ to a state of health, are we to boast because we can temporarily force into energy any organ or function that happens to be weak, or imagine that by so doing we are restoring the body to its normal state? Can we, to quote an illustration of rational therapeutics given by the author, having changed the reaction of an alkaline urine by the exhibition of a vegetable acid, assert that we have done anything towards the cure of the condition upon which it depends?

It may appear rational at the end of this century to cure sleeplessness with an hypnotic, fever with an anti-pyretic, constipation with a purgative. Will all this appear equally reasonable to our successors at the end of the next? Will they not consider the use of such agents as a mere masking of the symptoms, an abolition of the signs put forward by nature to warn us of the patient's danger?

It is impossible to forecast the steps by which the art of therapeutics will be brought into line with other branches of science. We may, however, take into account the fact that all physiological experiment shows that the reactions of the functions to stimuli obey precise and definite laws. They are stimulated to a certain point, and then exhausted. Hence by the intensity of the stimulus we can determine one of two opposite results, the increase of a function or its abolition.

This does not imply that the same drug possesses opposite actions, because there is no difference between a drug and a mechanical agent in its action upon the body. Both are physical agents whose movements continue in the same direction. The same drug or mechanical agent may thus produce opposite effects according to the intensity with which it strikes.

One of the first things to be expected in the construction of a science of therapeutics is the distinction between the exhaustive or toxic action of a drug, and its stimulant or remedial action.

The pursuit of such investigations may also lead us to alter the views at present entertained respecting the nature of drug action.

Effects which are apparently due to the stimulant effect upon the functions of the body, may be found to be really due to an exhaustion of functional energy; it may be even shown that every symptom produced by a drug on the human body (such symptoms as call attention to themselves) is due to a depression of vital energy.

If this is so it may be possible to have some definite law by which we can distinguish "a drug" from "a remedy," the "remedy" being an agent which will *not* produce symptoms when administered to a healthy person.

The main difficulty which appears to stand in the way of our being able to adapt our therapeutic agents to physiological principles is that we do not *think* in physiological terms. We speak of nervous excitement, as if it were due to an increase of nervous energy, whereas physiologically it is due to a diminution of nervous power. We subdue the excitement by a dose of bromide, and as the result is satisfactory, we consider that we are practising "rational" therapeutics. Physiologically we are only further exhausting a weak nerve, and thereby throwing it temporarily out of action. The symptom is removed, but the disorder is none the better. If we thought physiologically, it is not the dose of bromide which would suggest itself, but some nerve tonic, given in a dose that would restore the exhausted nerve, without exciting it. We should use a stimulant to produce a sedative action. It is not necessary for the elevation of the art of therapeutics to a science that one formula, one law, or one system, should be adopted. No branch of science is governed by the application of one single rule. We already recognize definite physiological laws which are demonstrably true, and it appears that when we use remedies in accordance with these laws we shall be practising a science, not an art.

AMMONIUM (Tetra-ethyl of).

Recent experiments indicate that tetra-ethyl-ammonium possesses marked **Solvent Power over Uric Acid,** and is perfectly safe for internal administration. It is a definite inorganic compound, occurring in deliquescent hair-like needles, absorbs CO_2 from the air, is strongly alkaline, saponifying fats; is as bitter as quinine. Concentrated, it burns the tongue, and has caustic action upon the epidermis.

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REFERENCE.—"Philadelphia Polyclinic."

ANTISEPTIC POWDERS.

The following is employed by M. Terrier[1]: Iodoform, powdered benzoin, powdered cinchona and carbonate of magnesum, of each equal parts ; a sufficient quantity of oil of eucalyptus being afterwards added.

The following is recommended by Dr. Pick[2] of Boston—

℞ Hydrargyri Chlorid. Corros. gr. $\frac{1}{6}$ (or gr. $\frac{1}{3}$) | Acidi Tannici gr. x
Sacch. Lact. q.s. ad. ʒij
Acidi Borici ʒj

M. Sig.—Antiseptic Powder.

A fifth of a grain of corrosive sublimate in this mixture gives a powder of the strength of 1 to 5,000, and a third of a grain, 1 to 3,000.

In preparing this powder care must be taken by the druggist to mix the sublimate very gradually and thoroughly with the sugar of milk, and then to add gradually the other ingredients, so as to be certain to obtain a uniform distribution of the bichloride in the mixture.

REFERENCES.—[1] "Union Médicale," Dec. 30, 1893 ; [2] "New York Med. Journ.," April 7, 1894.

APOCODEINE.

From a study of this drug made by L. Guinard[1] it has been proved, when pure, not to exhibit emetic properties. It is said, when given in proper doses, to have a calming effect, without a stage of preliminary excitement.

Following the administration of a calming dose of apocodeine, there almost always occurs a short period of cardiac and respiratory acceleration, accompanied by a slight elevation of the arterial pressure. On the other hand, during the period of sleep produced by the drug, both the heart and the respiration are slowed, and the arterial pressure is maintained at a little below the normal height. The slowing of the heart is not accompanied by disturbances in its rhythm, there being no intermittences. The action of apocodeine upon the heart is of medullary origin, as shown by previous section of the vagi. The diminution of the blood pressure appears to be due more to the slow action of the heart than to an active vaso-dilatation.

A fall of temperature accompanies its somniferous action. In all doses it produces a hypersecretion of saliva, of bile, of the pancreatic and intestinal juices, and of that of the majority of mucous glands. These hypersecretory effects are the result of a central action and not of a special influence exercised by the medicament upon the peripheral elements, particularly the glandular ones.

The changes produced by apocodeine originate in the primary actions exerted upon the nervous system. They first show themselves upon the brain, but they are afterwards extended to other parts of the organism. These actions are depressant when the dose ingested is moderate ; depressant and afterwards convulsant when the dose has been large but slowly administered ; and, finally, convulsant from the onset when the dose is so introduced as to be rapidly absorbed by the organism.

The author, comparing the effects of apocodeine with those of codeine, states that there will be found well-marked analogies, especially in regard to the ability of both drugs in producing sleep and in exercising a convulsant action. But a close examination of the subject will also show that there exists between the two medicaments notable differences in their actions. Codeine is less powerful as a hypersecretory and calming agent, but a more active convulsant and more dangerous, therefore, than apocodeine. This last substance, although less powerful than codeine, is, on the other hand, more constant in its effects.

REFERENCE.—[1] "Lyon Mèdical."

ASAPROL.

This, which is described as calcium salt of the sulphuric ether of beta-naphthol, was referred to in our last edition as having been used as an **Antipyretic** and as a remedy for **Rheumatism** and **Sciatica**, by Stackler and Dujardin-Beaumetz. It has been practically used as a substitute for salicylate of sodium, and Dr. Dujardin-Beaumetz considers that it may be used in many cases where the salicylates would be contra-indicated. He states that asaprol is well borne : (1,) In doses of from 4 to 6 grammes, in the form of cachets or in solution, by patients who cannot tolerate the sodium salicylate, quinine, or antipyrin ; (2,) In amounts of from 3 to 5 grammes, by dyspeptics who not only cannot tolerate any one of these medicaments, but who are unable to retain food ; (3,) Asaprol never produces vertigo, buzzing in the head, cephalalgia, nor any cutaneous eruptions ; (4,) In patients who, in the course of an acute disease, suffer from a slight albuminuria, the drug, in doses of from 4 to 8 grammes, does not increase the condition, nor does it prevent its disappearance, the albuminuria passing off before the suspension of the treatment ; (5,) Patients suffering from **Chronic Nephritis,** and in whom all medicine, all food, even milk, exercises a noxious effect, tolerate well the drug under study, in doses of from 3 to 4 grammes. In these cases asaprol does not increase the amount of albumen in the urine, neither does the medicament cause nausea, vomiting, or any nervous trouble. It

appears to have proved of some benefit in cases of **Acute Rheumatism** (articular and muscular) and in various neuralgic conditions, such as inter-costal neuralgia.

ASCLEPIAS TUBEROSA.

This is commonly known as the "butterfly-weed" and "pleurisy root." The latter name is applied to it in reference to its popular reputation as a remedy in **Pleurisy.** It grows freely in the United States, where the dried root is alone employed in medical treatment. It is found that when 20 grains of the dried root are given in powder, three times a day, it acts as a diaphoretic and expectorant. It is found to diminish both the volume and frequency of the pulse, and to be slightly sedative and astringent. In large doses, however, it acts as a cathartic. It is used by practitioners in the Southern States both in pleurisy and other inflammatory affections of the lungs, such as **Pneumonia.**

It is also said to promote the eruption in **Exanthematous Fever.** For this purpose it is employed in the form of a hot decoction.

It has also been used in **"Rheumatic"** disorders with some success. The following indications given for its use in the "Medical Age" (Feb. 26, 1894), point to its value in **Pleurodynia** and pleurisy. "For inflammatory chest trouble, with dry hot skin, or where there is pain in the thorax, localized, sharp, acute, or sub-acute, with increased inspiration, asclepias tuberosa often acts like magic."

Its specific effects appear to be chiefly exercised upon the serous and mucous membranes. Whether it has a direct relation to rheumatism, or is really more serviceable in those neurosal affections which are commonly mistaken for rheumatism is not quite clear, but from the cases treated successfully by this drug, we should say that *pain, aggravated by motion*, but which *may appear when the body is at rest* is one of the indications for its employment, and that it may prove useful also in those pains which come on more frequently at night, or which are induced by any extra fatigue or exertion. When used for this purpose 5 drops of the liquid extract is a sufficient commencing dose.

AURUM METALLICUM.

Dr. E. A. Wood of Pittsburgh, referring to the value of the salts of gold, which he has used extensively, says: "The class of diseases in which I have found gold to be peculiarly efficient, and in which it seems to be especially curative above all other drugs, is that class in which **Sclerosis** is the chief factor. In naming sclerosis as a class, I am perhaps taking undue liberty with the nomenclature of the

pachologist, since the term sclerosis is generally understood to mean induration of the tissues of the brain and spinal cord. Literally it is proper to apply the term sclerosis to any organ or tissue in which induration is the factor. When we marshal such pathological conditions into a class, we shall find that sclerosis has a wider and, it seems to me, a more significant meaning than has been hitherto attached to the word and the lesions it names. It would seem as though we have reduced therapeutics to an exact science when, instead of a name, we establish an exact pathological condition, with the remedy most efficient in removing that condition. That is the exactitude we have in gold as a special curative agent in all forms of sclerosis. Cirrhosis of the liver, interstitial nephritis, atheroma and its associate, calcareous degeneration of the arteries; the circumscribed induration following embolism or blood-clot in the brain-tissue, senility and its train of decrepitudes—for what is old age but a general sclerosis?—all belong to the class I have named. **Cirrhosis of the Lungs,** certain forms of consumption—**Fibroid Consumption, Miliary Tuberculosis,** and especially that form of consumption in which masses of lymph become organized in the lymphatics of the lungs, as we see the process in the glands of the neck and called adenitis. Without naming all the lesions that may be classified under the head sclerosis, I will state as my belief, founded on an experience of twenty years, that gold is far more efficient in them all than any other drug I know of. I desire to say in addition that the liquid preparations of gold as combined with bromine, arsenic, iodine, and mercury are as much superior to the chloride of gold and sodium as quinine is superior to the crude Peruvian bark.

"In addition to its efficiency in the sclerosis it would seem as though gold, at least the liquor auri et arsenii bromidi, exercises a power as a tonic and nutrient to the nervous system, especially to the nervous systems of those who have advanced to fifty and beyond. May it not be that in cases of **Neurotic Disease of the Aged** there is a sclerosis? Certain it is that gold is not so efficacious in functional nervous ailments of the young. It is just to remember, too, that the association of gold with bromine and arsenic may have very much to do with its curative powers."

The liquor auri et arsenii bromidi is almost tasteless. A dose of 10 drops contains one thirty-second of a grain of gold, and one-sixteenth of a grain of bromide of arsenic. The mercuric bromide of gold contains one thirty-second of a grain each of gold and bromide of mercury to 10 drops, which is the dose.

REFERENCE.—"New York Med. Journ.," Oct. 14, 1893.

BELLADONNA.

Professor H. Kobner,[1] of Berlin, recommends belladonna for such affections of the mouth as **Leucoplakia, Mercurial Stomatitis, Syphilitic Ulcerations, Mucous Patches,** etc. The theory upon which the remedy is accepted is its antisialagogue properties, and it should be employed in conjunction with cauterization. He remarks it is advisable in many cases to continue the administration of the remedy for some time in full doses, and that under its influence ptyalism, and pain on mastication and deglutition, rapidly disappear.

Dr. William Murray,[2] of Newcastle, after referring to the peculiar susceptibility of some patients to the action of belladonna, refers to its usefulness in the following class of cases.

(1,) **Renal Colic.**—Here he considers that the drug must be pushed until slight delirium supervenes—that is, by giving 30 or 40 drops of reliable tincture every two or three hours ; secondly, it must be given during an attack of colic. It is of no use except the colic be present. It may relieve the ordinary wearing pain of stone in the kidney, but it will not move the stone except the patient is in the throes of an attack of renal colic. When once this occurs he ought to be prepared with the necessary doses and begin immediately, even before sending for his medical attendant. In such cases careful instructions ought previously to be given to the patient. Dr. Murray cannot say that anything in his experience has given him more pleasure than finding the calculus awaiting him after a few hours of this treatment by toxic doses of belladonna.

(2,) **Dysmenorrhœa.**—Let it be admitted that dysmenorrhœa is due to spasm, or to mechanical obstruction *plus* spasm, or *plus* neuralgia, or *plus* inflammatory or congestive action in or connected with the uterus, and there is a large field for the action of belladonna. A patient well under the influence of the drug is not likely to suffer much from spasm, so that the spasmodic element can be eliminated in a case by a full dose or two of belladonna. If after these doses pain still continues, there are no doubt other elements in the case—mechanical, congestive, or inflammatory. The neuralgic element is also to a great extent eliminated by belladonna, so that one can get rid of these two causal elements by means of this remedy, and thus the diagnosis is simplified. By far the best method of administering the drug for pelvic pain is the use of the suppository of 1 grain of the extract repeated every two or four hours. The suppository should be used as soon as the first sign of pain indicates the molimen, and although it is a somewhat disagreeable mode of administration Dr. Murray thinks the general use of

belladonna suppositories for this ailment ought to be advocated, and many sufferers from even slight dysmenorrhœa ought to be provided with this remedy and instructed in the use of it.

Dr. Murray also recommends belladonna strongly in cases of **Painful Defæcation,** and **Obstruction of the Bowels,** and quotes some successful cases in proof of the latter point. He does not consider that the effect is simply due to the relaxation of fibre caused by the drug. It appeared more as if the intestines were roused from their dormant state into violent activity by the drug. There is nothing opposed to physiological experience in Dr. Murray's views. It is known that when frogs have been poisoned by belladonna and put aside for dead, they frequently exhibit during the process of recovery powerful spasms of the muscles, closely resembling strychnine poisoning, and if it were safe to carry the administration of belladonna far enough probably the same results would be produced in the human subject. How far it may be safe to push the action of belladonna until tetanic spasm is produced is another question. That some have great toleration for the drug, and others extreme susceptibility, is widely known. We have seen toxic symptoms produced by one drop of 1 in 100δ solution of its tincture, and cases of grave physiological disturbance caused by the use of the ordinary solution of atropin in ophthalmic practice. On the other hand Dr. Murray records a case where 8 grains of belladonna extract, taken by mistake, produced little effect on the patient.

REFERENCES.—[1] "Medical Age," Feb. 2, 1894. [2] "Lancet," Nov. 4, 1893.

BLOOD SERUM. (See also "Naja Tripudians.")

In an article upon the action of rattle-snake venom by Dr. Chas. B. Ewing[1], of the U. S. Army Medical Department, there appears a very excellent report on our present knowledge in respect to the germicidal action of blood serum. Dr. Ewing says this germicidal power of the blood is one of very great significance, on which many of the modern theories of immunity depend. It is of special interest to ascertain under what conditions the germicidal properties of the normal blood serum are at their highest, and in what way these properties affect the composition of the blood. The principal workers in this field have been Von Fodor, Nuttall, Wassermann, Kitasato, Buchner, Ogata, Hankin, and others. Von Fodor's work had reference to the composition of the blood, and was intended to show that arterial has a more destructive action on bacteria than venous blood, and also that fresh blood has a more destructive action than

that which has been standing for some time. It was also found that the germicidal power of the blood was weakened in an atmosphere of oxygen or carbonic acid gas, but the removal of gases from the blood had no appreciable effect. A series of experiments showing the effect of moving and stationary blood upon bacteria by means of small globes containing blood, some of which were kept in constant motion and others quite stationary, resulted in no appreciable difference being observed. Temperature affected very materially the bactericidal power of the blood, which increased with the rise of temperature from 38° to 40° C., and then gradually diminished with the fall. Von Fodor is of the opinion that the individual predisposition of an animal to an infectious disease stands in close relationship with the germicidal power of the blood. A second series related to the influence of drugs on the power of blood to destroy germs. Hydrochloric acid had no effect; tartaric acid and quinine respectively produced a marked decrease. A slight increase was produced by common salt and carbonate of ammonium, but a more marked effect by the phosphate of sodium, while the carbonate of potassium and sodium showed a very remarkable increase. From these experiments the deduction was made that the bactericidal power of the organism was raised by any drug which increased the alkalinity of the blood. The third series verified the conclusions regarding the alkalisation of the blood. Of eight rabbits inoculated with anthrax all died, whilst of nineteen which had been previously injected with solution of soda, only three died. A majority of the sixteen remaining were perfectly free from disease, only a few being fatally affected. Up to this time, however, the doctrine of phagocytosis as advanced by Metchnikoff held sway, when Nuttall struck the first severe blow to this theory. He, in his most excellent inaugural dissertation at Göttingen in 1890, showed that the destruction of virulent bacteria in the blood of animals by the leucocytes was not at all essential, but that the serum of blood free from all cellular elements possessed this power to a degree equal to the blood in its entirety. Nuttall's work is graphically shown in some twenty-eight tables in his "Beiträge zur Kenntniss der Immunität." He here proves very conclusively that in the blood, bacteria presented marked evidences of degeneration before being taken up by the wandering cells or leucocytes. It was also seen that the bactericidal power of the blood of different animals varied, and that while in some certain bacteria were promptly killed, in others these were simply restrained for a time, or not affected. Buchner, Lubarsch, Nissen, Stern, and Prudden have practically verified these observations. Buchner particularly, in his experiments upon dogs

and rabbits, verified the findings of Nuttall; but went even further, and proved that the bactericidal power of the blood of these animals did not at all depend upon the cellular elements, but resided in the clear serum which separated from the clot after the blood had stood awhile in a cool place. He also demonstrated that the germicidal action of blood and serum was destroyed by exposure for an hour to 55°C., or by heating to 52°C. for six hours or to 45·6°C. for twenty hours. Alternate freezing and thawing did not destroy the bactericidal power of serum, but it was diminished or completely checked by dialysis with distilled water, or by extreme dilution with the same. He preserved the anti-bacterial action of the serum by making an equal dilution with a 0·6 to 0·7 per cent. of sodium chloride solution, and was led to believe that the activity of the serum was greater alone than when the cellular elements of the blood were present; hence he concluded that the active element is a living albumen, having as an essential constituent an alkaline base.

This albuminoid substance is thought by Hankin to be identical with his "globulin," isolated from the spleen and lymphatic glands. According to the views of these experimenters the germicidal power of the blood resides in the serum alone and phagocytosis is but a secondary process, the leucocytes taking up the bacteria only after they have been rendered inert by the germicidal power of the serum of the blood and certain other fluids of the body. For our purpose, however, it is not necessary to insist upon the humoral as opposed to the phagocytic doctrine of immunity. All that concerns us is the recognition of the bactericidal power of the blood serum under certain conditions. The loss of this normal germicidal power helps us to explain the varying rapidity with which post-mortem decomposition sets in. It is well known that the bodies of persons who have died from different diseases decompose with varying degrees of rapidity. We cannot explain this differing rapidity of decomposition simply by variations in temperature, for under the same external conditions one body will be decomposed in comparatively a few hours and another may remain undecomposed for several days. We selected the animals killed with rattle-snake venom because it is well known that they decompose with great rapidity. The bodies of human beings killed by snake venom are also said to decompose with great rapidity.

The results of our experiments furnish a satisfactory explanation of this phenomenon. The blood at the time of death, and even before death, has lost all, or nearly all, power of resisting the invasion and multiplication of certain bacteria, so that the bacteria of putrefaction which are normally present in the intestine develop with astonishing

rapidity, and even before the animal is cold produce this wonderfully rapid decomposition. Our experiments are also suggestive as regards certain secondary and mixed infections. The toxic proteids of snake venom belong to the same class of poisons as those formed by toxic bacteria, such as the bacillus of tetanus, of diphtheria, etc. It is easy to suppose that these infectious diseases may cause a diminution of the germicidal power of the blood against secondary invaders, of which common examples are the pyogenic bacteria present often in our mouths and intestinal canals, and which, in an individual whose resistance is lowered by a loss of the germicidal power of the blood, may grow and multiply. In other words, we can understand better the causation of many of these secondary infections.

REFERENCE.—"Lancet," May 19, 1894.

BROMELIN.

This is the digestive ferment of the pine apple and somewhat resembles the action of papain and papoid. It has the power of digesting proteids which is manifested in fluids of all reactions, acid, alkaline, and neutral, the ferment being in this respect a trypsin rather than a pepsin; it acts, however, most strongly in a neutral solution. The proteolytic ferment may be separated by saturation of the neutralised fluid by sodium chloride or magnesium sulphate, the former being the preferable method. It appears to be a mixture of a globulin and a proteose.

CALCIUM CHLORIDE.

The value of chloride of calcium as a *hæmostatic* forms the subject of a recent communication by Prof. Saundby to the "Birmingham Medical Review." He records one case of severe **Bleeding from the Rectum,** probably due to piles, in which the drug administered in small doses every four hours, caused the bleeding to stop in five days. Ovarian remedies used in the same case had completely failed.

In another case of **Purpura Hæmorrhagica**, where there was bleeding from the gums and slight **Hæmaturia,** in which ergot, gallic acid, and acid infusion of roses had been used in vain, small doses of the calcium chloride checked the bleeding in five days.

There is a very important point respecting the dose of this drug. When too large a dose is given the coagulability of the blood is *diminished* instead of *increased*, and Prof. Wright proved by adding too large a dose of its salt to decalcified blood in vitro, coagulability diminished, and on taking 2 grammes of calcium chloride three times a day the coagulability of the blood rose during the first twenty-four hours, returned to normal during the second, and in the third fell

below normal, so that the best results may be looked for from comparatively small doses. In the author's cases the drug was administered in the form of the liquor calcii chloridi of the new British Pharmacopœia, which is of the strength of 1 to 5, and the dose employed never exceeded 30 minims, or 6 grains, though in the case of purpura this quantity was given every two hours during the day for some days.

CAMPHORATED PHENOL.

Bufalini suggested many years ago the combination of camphor with carbolic acid, because while the camphor greatly moderates the caustic and disorganizing effect of the acid, it does not interfere with its antiseptic properties. This combination is prepared by mixing one part of carbolic acid with two parts of camphor, allowing the mixture to stand for some hours and purifying it by washing with water. A liquid is thus formed of a reddish yellow colour, having the smell of camphor, which is insoluble in water but soluble in alcohol or ether.

Dr. Toms ("Medical Record") states that he has been using this preparation "diluted with 50 per cent. of cotton seed oil" with excellent results, as a dressing for a severe case of extensive ulcerating **Epithelioma** of the leg, with most satisfactory results. It appears that both the oil and the ointment made in a more dilute form would make a more agreeable and more anæsthetic dressing than pure carbolic. We have for a long time used a combination of carbolic acid and camphor as one of the best remedies for **Pruritus,** and have found it very useful.

CARPAINE.

This alkaloid, obtained from the leaves of Carica Papaya, has been investigated by Von Oefele. He finds its action closely resembles the digitalis group. In doses of $\frac{3}{8}$ grain *per diem* it caused similar disturbances in the rhythm, blood pressure and pulse. He also found that carpaine was the only congener of digitalis that could be used hypodermatically without causing irritation and abscesses. The cardiac diseases for which he found it most useful were **Aortic Insufficiency** and **Stenosis.** In doses of $\frac{1}{10}$ grain daily it effected reduction of the frequency of pulse, alleviation of **Dyspnœa,** and doubled the **Excretion of Urine.**

CEREBRINE.

In our article on Organic Extracts in the "Medical Annual" 1894, p. 25, we expressed a very strong opinion in respect to cerebrine and remedies of its class. We have since seen a letter

addressed to the Journal of the American Medical Association by Prof. Bower of Chicago, and one from the eminent chemist, Delafontaine affording evidence that the active principle of cerebrine is nitro-glycerine, with which this inert organic extract is sophisticated.

From an advertisement which appears freely in the American newspapers with Dr. Wm. A. Hammond's name attached, we find that "the physiological effects produced by a single dose of cerebrine are acceleration of the pulse with feeling of fulness and distension of the head, etc."

These are symptoms of nitro-glycerine and do not appear after a dose of cerebrine prepared in accordance with Dr. Hammond's published formula.

CINNAMON OIL.

Dr. Just Championniére[1] considers this essential oil to be almost equal to corrosive sublimate, as an **Antiseptic** and **Microbicide.**

He found the best combination was made with rétinol, and he uses the following:—R: Rétinol, 75 grammes; Sterilised Wax sufficient to make a proper consistence; Cinnamon Oil, 1 gramme. Or, R: Rétinol, 75 grammes; Sterilised Wax, 25 grammes; Cinnamon Oil, 1 gramme; β-Naphthol, 1 gramme. The oil must have been recently re-distilled. The preparation is spread on lint and applied to the wound. The author has employed this preparation in cases of laparotomy, radical cure of hernia, excision of the chest, etc., and he claims that extensive wounds, even those which are drained, may be kept in a very satisfactory state of antisepsis.

REFERENCE.—[1] "Amer. Journ. Med. Sci." Oct. 1893, p. 479.

COCAINE.

In order to prevent the unfavourable after effects of cocaine when it is used as a local anæsthetic by injection, Dr. Gauthier[1] suggests the addition of 1 drop of a 1 per cent. solution of nitro-glycerine to the quantity injected.

As many patients experience severe physiological disturbance from a single drop of nitro-glycerine given by the mouth, we would suggest that those who adopt this recommendation shall use a smaller dose, or they may find that the remedy is more troublesome than the disease.

A drop of nitro-glycerine (1 per cent solution) placed on the tongue of patients suffering from cocaine symptoms is undoubtedly a very useful remedy.

REFERENCE.—[1] "Gazette des Hôpitaux."

CROTON OIL.

The following notes on the administration of croton oil, which we find in a recent issue of the "Medical Age," are of practical interest :—

"Croton oil, as is well known, is derived from the *Croton tiglium*, a tree of the natural order Euphorbiaceæ, indigenous to India, the Moluccas, and Ceylon. All parts of the growth possess medicinal properties, but the seeds alone are employed medicinally, and are likewise the source of croton oil. In the Orient the seeds are prepared for use as a safe and efficacious purgative by being boiled thrice in milk, drying well after each boiling, and finally removing the outer shell and embryo.

"Doctor Waring remarks that he has found the seeds, especially when prepared in the form of pill with catechu and oil of peppermint, uniform in action, 'producing five or six copious watery stools, and operating within two or three hours after being swallowed.' The oil is drastic purgative in doses of $\frac{1}{2}$ to 3 drops; but is merely **Stimulant, Cathartic** and **Alterative** in doses of $\frac{1}{60}$ to $\frac{1}{20}$ grain. It may be given in the form of a pill with any simple excipient; or if the patient from any cause is unable to swallow, it may be placed at the root of the tongue, its whole purgative action being equally obtainable in this way. Besides activity and smallness of dose, there is another advantage in its employment, viz., the circumstance of its operating chiefly *through nervous influence*; hence it is emphatically a specific cathartic. When applied endermically to the abdominal region, conjoined with some soft oil, besides acting as a vesicant it proves cathartic in a very short time.

"In some persons, it is true, croton oil produces, even in small doses, severe hypercatharsis; yet this idiosyncratic action, which is only rarely manifested, may be readily relieved by a draught of lemon or lime-juice. When administered in connection with camphor monobromide in the proportion of 2 to 5 grains of the latter, its effect is very happy, being devoid of nausea, hypercatharsis, and tormina. Alkalies also modify the acrimony of the oil without impairing its cathartic properties, and the addition of a small portion of opium diminishes violence of action. It may be added that alcohol removes the vesicating principle from the oil without materially impairing its value as a cathartic.

"In the obstinate **Constipation** which accompanies inflammation of the brain, mania, and other cerebral affections, croton oil is especially valuable, acting not only as an aperient but as a derivative

and revulsive. It is peculiarly advantageous in the treatment of **Apoplexy** owing to the ease with which it may be administered—placed on the back of the tongue it acts freely throughout the digestive tract. It is also efficacious in **Lead Colic** when other remedies fail. In **Dropsical Affections** where hydrocathartics are indicated, full doses are often preferable to elaterium or other remedies of this class, but it is not admissible when the patient is old and debilitated. In this class of cases it should be first administered in small doses, and then increased according to the amount of purgation induced.

"Doctor Heaton,[1] of Leeds, called attention to the fact that when it is advisable to administer a cathartic in **Albuminuria** there is none so convenient as croton oil, which he declares produces "copious evacuations with less sickness and discomfort than elaterium." In **Neuralgia, Tic Douloureux**, and **Sciatica**, Mr. Newbigging,[2] asserts all distressing symptoms disappear after its internal administration. In these cases it undoubtedly acts as a revulsive; but it must also be remembered it is claimed to possess a specific power in this class of maladies apart from its purgative action.

"Doctor Sewall,[3] of Ottawa, Canada, urges the extension of the use of this drug to **Chronic Rheumatism**, in which he declares he has employed it 'with great advantage in many instances.'

"Physiologically, croton oil, by increasing the vascular dilatation in the intestines, lowers intercranial blood-pressure, consequently it should not be employed when a condition of cerebral anæmia exists.

"From the foregoing it may be readily surmised that croton oil is far from the dangerous remedy that it is generally considered, and that, employed with due reference to its physiological application, it fills a place in therapeutics occupied by no other drug; that it is the remedy chiefly available in disordered states of the nervous system; that it is serviceable when bulky drugs are inadmissible, or where the patient is insane or otherwise unmanageable, or exhibits difficulty in swallowing. It is contra-indicated, however, in young and delicate subjects, in debilitating complaints, and where any portion of the alimentary canal is in an irritable or vascular state, though even under these conditions, if carefully administered in conjunction with bromide of camphor or alkalies, it may prove of especial service. In minute doses it is unmistakably the best hepatic stimulant we possess.

REFERENCES.—[1] "Prov. Med. Journ." April, 1849: [2] "Edin. Med. Journ.," January 1, 1841; [3] "Braithwaite's Retrospect," 1865.

CUPRI SULPHAS.

Dr. A. F. Price[1] says copper exercises a specific action in **Syphilis,** which is especially directed toward the lymphatic system. It is for this reason more radically curative than mercury.

It is slow in removing the skin symptoms of the secondary stage. It prevents the development of mucous patches and throat symptoms. It is a very active drug, and it is wise to omit its use one day in a week, and sometimes more frequently. The signs of its excessive and injurious action are first a voracious appetite, and this is rapidly followed, if the dose is not reduced or the drug temporarily discontinued, by prostration, giddiness, pallor, and a rapid and weak pulse.

The average dose of sulphate of copper is $\frac{1}{30}$ grain thrice daily. It is better to give it with the sulphate of iron. It can be given either in pill or solution.

This dose is absolutely dangerous in cases of syphilitic cachexia. It produces at once excessive and alarming prostration. If a sufficiently small dose of the drug is given at first, a tolerance of it is gradually established, so that the average dose may in time be attained.

He is inclined to think that in some cachectic cases as small a dose as $\frac{1}{10000}$ grain may be necessary, given once daily. The use of iron, arsenic, and iodide is also usually necessary in old syphilis.

REFERENCE.—[1] "American Lancet," March, 1894.

CYNOGLOSSUM MACROSTYLUNBRIGE.

This plant belongs to the natural family of *Boraginaceæ*, and has been identified by Prof. A. F. Batalin as identical with the "külan-kuirgak" which the peasants of some parts of Turkestan, when **Goitre** is prevalent, use for the cure of this disease. The remedy is used both internally and externally. Internally it is taken in the shape of an aqueous infusion prepared from the whole plant minced (including the root), an average daily dose of such "tea" being 6 tumblerfuls. Simultaneously a well-steamed leaf of the plant is applied hot to the tumour and fixed by a piece of some woollen stuff, the simple dressing being changed once daily. The treatment is continued until the patient has obtained a more or less pronounced improvement—that is, until all uncomfortable sensations have disappeared, and the tumour is more or less markedly diminished in bulk, after which the patient leaves his gôitre alone. The natives certify positively that "such a gôitre as has once decreased in size under the influence of the külan-kuirgak will never grow any more, remaining *in statu quo* for the rest of the subject's life." Similarly successfully the remedy is employed for the treatment of all possible tumours, abrasions, etc., in

horses and cattle, the diseased parts being kept covered with a sort of plaster made of the plant.

REFERENCES.—"Vratch," No. 17, p. 495, 1893 ("Journ. of Laryngol.," p. 596, 1894).

DIAPHTHERIN.

The investigations made by Stabel with this agent show that anthrax spores lost all power of growth after being in a 15 per cent. solution for three days. From a series of experiments on animals the author concludes that even the continued use of diaphtherin in man cannot be injurious, as it could not be used in sufficient quantities to be dangerous. It is especially adapted, on account of its non-poisonous properties, for washing out hollow cavities where at present very weak antiseptics have to be employed. It is to be preferred in 1 or 2 per cent. solution to other antiseptics where moist applications are required for a long time, as in **Burns, Ulcers,** etc. It only discolours the nails and hands when previously soaked in sublimate solution. Steel instruments must not be put into it.

REFERENCE.—"Münch. med. Woch.", Sept. 10, 1893.

DIGITOXIN.

Masius[1] says that digitoxin, when given to patients suffering from **Cardiac Affections,** causes cyanosis and dyspnœa to disappear, and restores regularity, force, and volume to the pulse. These effects manifest themselves between the twelfth and twenty-fourth hour following the administration of the drug. At the end of twenty-four hours marked diuresis occurs, the amount of urine discharged sometimes amounting to four litres in the day. The gastric derangement caused by digitoxin is trifling. The author has tried the drug in twenty-six cases. Six times he has, after the administration of doses varying from 3 to $4\frac{1}{2}$ milligrammes, seen vomiting occur, but this soon ceased when the drug was discontinued. The digitoxin is better tolerated when given in black coffee with sugar. The remedy may usefully be prescribed in certain acute diseases, such as pneumonia and typhoid fever. In patients suffering from the former affection, it after some hours brings about a reduction of temperature, and has a very favourable action on the pulse. It is equally efficacious in typhoid.

REFERENCES.—[1] "Acad. de Méd. de Belgique," July, 1894; "Presse Méd.," August 25; "Brit. Med. Journ.," Sept. 9, 1894.

DI-IODOFORM.

This has been brought forward as a substitute for iodoform, its chief merit being that while it possesses the **Antiseptic** and **Cicatrizing Action** of iodoform, it is without smell.

M. L. Maquenne[1] says it is a definite iodide of carbon, which answers to the formula C_2I_4; it is derived from ethylene or olefiant gas, and should be called, according to the rules of chemical nomenclature, periodized ethylene.

The quantity of iodine is very nearly the same, exceeding greatly that contained in iodol and aristol, which are sometimes used instead of iodoform. This explains the analogy of the action of these two substances and their undisputed superiority over all other antiseptics having iodine for their base. Di-iodoform is a yellow substance, almost entirely odourless in an ordinary temperature, which melts at 377·6° F., and becomes decomposed into its elements, carbon and iodine, under 392°; it is perceptibly volatile when heated, and can be sublimed. Completely insoluble in water, slightly soluble in alcohol, di-iodoform is easily dissolved in carbon disulphide, in chloroform, in benzene, and in the majority of hydrocarbons, and it is deposited in the form of beautiful prismatic needles, which are pulverized for use like iodoform crystals. Di-iodoform can be kept indefinitely in a dark place, but is susceptible to light. Under its influence it becomes darker and emits a slight odour somewhat like that of the hypochlorites. In order to prevent this, di-iodoform, and all preparations in which it is contained, should be put into bottles coloured green, yellow, or red. It is recommended also, when employing it, not to expose it too long to a bright light. If these precautions are followed, it is possible to have dressings that are strictly odourless. Experience has shown that it is well borne by the stomach, and that it is practically non-poisonous. With regard to its germicidal action, it is the same as that of iodoform.

REFERENCE.—[1] "La Presse Méd.," Feb., 1894.

DJAMBOE.

Hugel[1] has employed the leaves and bark of this plant with good effects in several hundreds of cases of **Gastro-Enteritis** in children, the **Diarrhœa** and vomiting being rapidly improved. In five cases of severe gastro-enteritis in the adult, accompanied by vomiting, diarrhœa, low temperature and cramps, a few doses of calomel followed by djamboe produced rapid improvement. In about twenty-five cases of diarrhœa in **Phthisis** it was used with beneficial results. In two similar cases, however, it was without effect, and in two others it only acted when combined with opium. An infusion is more suitable for children, and a fluid extract for phthisical adults.

REFERENCE.—[1] "Münch. med. Woch.," July 17, 1894.

DUBOISINE.

From the careful and detailed observation of Dr. de Montyel, chief physician of the Asylum for the Insane, Department of the Seine, we are able to note the following effects of this drug when administered to produce sedative effects :—

Skin.—The skin becomes dry, but the dryness is not accompanied by any symptoms which attract the attention of the patient. Sometimes perspiration is produced.

Mouth.—Dryness of the buccal mucous membrane occurs, which causes discomfort. Sometimes intense salivation is produced instead of dryness.

Urine.—Usually a marked diminution in quantity is present.

Bladder and Urethra.—No effect usually observed. One patient had urethral spasm. (He was suffering from general paresis.)

Stomach.—Digestive disorders usually appeared after drug had been used for a few days. Loss of appetite. Tongue sometimes coated, sometimes not. Taste in mouth resembling soap. Vomiting, which usually occurs at or after principal meals.

Vomiting did not occur when the drug was only administered at night, with two exceptions.

Nutrition.—General loss of flesh in all patients to whom it was administered, rendering it necessary to abandon the drug in many cases. The emaciation was observed in patients who did *not* suffer from vomiting or loss of appetite.

Loss of weight was not observed in patients to whom the drug was administered only at night.

Nervous System.—A decidedly sedative effect on the nervous system was observed. This is accompanied by reduced arterial tension, elevated temperature, and sluggish pupil.

Flushing of face and vertigo were only occasionally observed.

Patients soon obtain a tolerance to the sedative effects of the drug. In other words, the only effect of the drug from which the patient obtains a temporary advantage is lost after four to twelve days.

In respect to its administration, Dr. de Montyel says hypodermic injection is superior to its administration by the mouth, both as regards the rapidity of its action and its efficacy. It is also better to give the drug interruptedly than continuously, in order to avoid a tolerance of it; and, finally, it is better to give it in fractional doses than in a single dose.

DULCIN.

Prof. Kobert[1] has brought forward a new sweetening agent, which is 200 to 250 times as sweet as sugar. Structurally it must be described

as para-phenacetol carbamid. It is an aromatic uric acid derivative related to phenacetin. It is a white powder which melts at 173° C. to 174° C., and is soluble in about 800 parts of water at 15° C., 50 parts of boiling water, and 25 parts of a cold 90 per cent. solution of alcohol. It is capable of producing poisonous effects when administered in large doses to animals. In the relatively small doses necessary for sweetening the food of diabetic patients and the obese, Prof. Kobert considers the agent harmless, and mentions a case in which 8 grammes were taken daily for three weeks with impunity. It is quite evident, however, from the physiological experiences related that some care is necessary in the use of this article.

REFERENCE.—[1] "Central. für Innere Medicin.," ("Lancet," April 24 1894).

ELATERIUM.

The following is said to be a preparation used by Prof. King in the treatment of **Cystitis**:—

℞ Elaterium 5j | Alcohol (75 per cent.) Oj

Sig.—30 to 60 ♏ to be used three times a day until the bowels are freely acted upon, and afterwards 8 to 10 drops every three hours.

A preparation of 10 drops of the tincture in 4 ounces of water, and a teaspoonful given three or four times a day, is said to relieve irritation of the bladder and kidney.

REFERENCE.—"Medical Age."

EMOL.

This is the discretional name given by Dr. W. Allan Jamieson,[1] to a natural product, refined and purified by various intricate processes, but unsophisticated in any way. He has had the opportunity afforded of seeing the substance *in situ*, and of following all the stages through which it passes till it emerges as the delicate, soft, impalpable powder. The material from which emol is prepared is found in large quantity near Dunning, in Perthshire, where it occurs in close association with serpentine marble, chalcedony, onyx, and copper. It has been examined and analyzed by Dr. Readman, who finds that it is allied to fuller's earth, yet is distinct from most, if not all, varieties of fuller's earth hitherto in the market. Emol contains steatite as well as silica, alumina, with a mere trace of lime, and it is probably to the first ingredient named that its peculiar properties, summarized in its adopted designation, are due. The delicate pink tint which it exhibits is owing to the presence of a very minute quantity of oxide of iron. When placed on the tongue there is an absence of the

sensation of grittiness so perceptible when fuller's earth of the ordinary kind is tested in a similar way.

The first effect noticed when a small quantity—say a teaspoonful—is mixed with a hard water, such as is met with in limestone districts, in a basin, is its immediate softening influence. Used in this manner with warm water it acts as a natural soap, cleansing the hands, and at the same time leaving them soft and smooth. The workmen engaged in its preparation found that their previously horny palms became so much altered by continued contact with it that they were no longer fit for active manual labour, assuming, as one of them remarked, a softness more like that of a lady's hand; they could not use their hands for any employment which exposed them to friction. This experience led Dr. Jamieson to try it for the purpose of softening and removing those horny accretions encountered in some states of **Keratosis** of the palms and soles. For the treatment of these salicylic acid in some form or another has hitherto proved the most effectual agent, but its application is accompanied with considerable pain, though otherwise successful enough for a time, if not permanently. When, however, a magma of emol was made by moistening some with water, so as to form a paste, applying it pretty thickly, and preventing evaporation by covering with an impervious material, such as oiled silk or gutta-percha tissue, the epidermic masses became softened and loosened, and could be peeled off in layers, eventually leaving the part so treated soft, smooth, and pink in hue. In this way he was able to remove the hard, horny epidermis in several cases of **Eczema** of the palm and sole. One of these cases was that of a gouty lady, tall and stout, in whom many different methods of management had been before tried with but indifferent effect. In her case the subsequent application of unguentum vaselini plumbicum, spread on cotton, had the result of restoring a healthy cuticle, which enabled her to undertake a prolonged continental journey with ease and comfort.

This substance appears likely to prove a most important addition to our therapeutic resources.

REFERENCE.—[1] "Brit. Med. Journ."

ERGOTINE GALLATE.

Dr. Blaschko, of Berlin, employs the following preparation in the treatment of **Hæmoptysis**:—

℞ Ergotine	1 part	Syrup of Althæa	25 parts
Gallic Acid	1 part	Distilled Water	25 parts

Sig.—A teaspoonful is given every two hours.

Where there is much disposition to cough, the syrup of althæa is replaced by syrup of diacodium, and, if there is imminent danger of death, the patient takes the teaspoonful every hour.

ETHYL BROMIDE.

We called attention to the value of bromide of ethyl as an **Anæsthetic**, in the "Medical Annual" p. 13, 1893. Prof. Terrier,[1] has lately used it largely at the Hôpital Bechat, Paris, and the following description of his mode of administration may be useful. "The bromide of ethyl should be given in large doses. After pouring it abundantly [about 3 grammes] upon a folded towel, it is placed over the nose and mouth of the patient, who is told to breath deeply. Generally at the second or third inhalation a slight agitation appears, but at the fifth or sixth the anæsthesia is complete, with total loss of consciousness. With the continuance of this anæsthetic, in a moment, sometimes preceded by tonic contracture, the complete muscular resolution is accomplished, with congested face and dilated pupil. At this moment the towel saturated with ethyl bromide is rejected and another upon which chloroform is poured is substituted in its place, without allowing any interruption of anæsthesia in changing. The first dose of chloroform only should be fairly strong. At this moment the operation may be commenced [about three-quarters to one minute since the commencement of the anæsthesia]. The facial congestion diminishes little by little, the pupillary dilatation gives place to retraction; in a word, the transition from the anæsthesia of the bromide to that of chloroform is accomplished without the slightest interruption of the sleep. From this moment the continuance of the anæsthesia is done in the ordinary way. The difference is simply that the complete anæsthesia is immediate, instead of resultant of a period often long, which is necessary in the process of chloroform anæsthesia."

The reporter of the above description to the "Therapeutic Gazette," maintained a patient in a condition of anæsthesia for thirty-two minutes, by using 3 grammes of bromide of ethyl and 12 grammes of chloroform, while Prof. Terrier performed the operation of ovariotomy.

Dr Segond, of the Maison de Santé, Paris, is said to be using this method to the exclusion of all others.

Prof. Panloff,[2] makes the following observations :—

(1,) The narcosis comes on in a relatively shorter time—about two minutes—and the patient does not pass through a stage of excitation.

(2,) It requires a very small amount of bromide of ethyl—about 5 grammes—to bring about full anæsthesia.

(3,) The narcosis is not attended by any disagreeable manifestations.

(4,) A small amount of chloroform is needed to keep the narcosis up.

(5,) There follow no bad after-effects.

About 16 grammes of the chloroform is required to keep up the narcosis for fifteen minutes.

Kochler,[3] reports an instance of death during the administration of ethyl bromide. The patient, a weak, though otherwise apparently healthy, woman, aged twenty-one, was about to be submitted to an operation for rectal fistula. The anæsthetic was given in small quantities with a mask. After a very transient and mild stage of excitement the heart's action suddenly ceased. The breathing continued for about half an hour, but, notwithstanding galvanism of the phrenic nerves, subcutaneous injections of ether, and injections of saline solution into the median basilic vein, the patient never rallied. There can be no doubt, the author thinks, that the fatal result in this case was due to cardiac paralysis. The air-passages remained quite free, and breathing persisted for some time after the cessation of the cardiac movements. There was no indication of any respiratory disturbance. The phrenic nerves ceased to react to the electric current between four and five minutes after the arrest of the heart's action. The anæsthetic, on careful examination, was found to be pure. Ethyl bromide. it is held, cannot be regarded as an absolutely safe anæsthetic. No fewer than five cases have been recorded in which death was the result of a careful administration of a pure preparation of ethyl bromide. The result of the necropsy in the author's case confirmed the suspicions that had been suggested by the very sudden arrest of the circulation. The left side of the heart was contracted and empty, and the walls collapsed. The muscular structure showed signs of extreme fatty degeneration, being speckled and studded with white patches. The surface of the heart was covered with a thick layer of fat, extensions of which could be traced in the very thin muscular walls of the ventricles.

REFERENCES.—[1] "Therapeutic Gazette," Feb. 1894; [2] "Medical Record," March, 17, 1894; [3] "Central. f. Chir.," No. 2, 1894, ("Brit. Med. Journ.," March 10, 1894).

ETHYL IODIDE.

Dr. S. S. Cohen[1] says: "In any case in which the local effect of iodine upon the air-passages is desired, or in which it is necessary to get a constitutional iodine effect, without resort to the stomach,

the inhalation of ethyl iodide offers a convenient and effective means of accomplishing the purpose. It is thus of use in syphilis, and especially in cases of **Syphilitic Inflammation** or **Ulceration of the Nose, Mouth, and Throat.** It is of great benefit in **Tuberculosis** of the larynx, and in pulmonary tuberculosis, at any stage of the disease, but especially when local stimulation and disinfection are desired. In subacute and chronic **Nasal Catarrh,** in some cases of **Hay Fever,** in subacute **Laryngitis** and subacute **Bronchitis,** and in chronic laryngitis and chronic bronchitis, when a sedative, sorbefacient, and disinfecting agent is desired, inhalation of a mixture of equal parts of terebene and ethyl iodide gives most satisfactory results. Ethyl iodide is extremely useful in **Ozæna** and in fetid bronchorrhœa. It has been employed with apparent benefit in asthma, and in acute croupous pneumonia and acute broncho-pneumonia of various types. In one case of **Whooping-Cough** in an adult, it was apparently of service. It may be introduced into the Eustachian tubes and middle ear by means of a Politzer bag and catheter. To get the full benefit of the drug, it must be used frequently and persistently. Thus, in cases of pulmonary tuberculosis, I have had patients keep up the daily inhalation for two, three, or more years. While in cases of active disease the inhalations are sometimes practised as often as every half-hour, in convalescent cases, or in cases of tuberculosis not showing active progress of lesions, the intervals are proportionately lengthened. Two hours constitute the average interval. Three times daily are sufficient in some cases. Some patients can inhale the vapour of ethyl iodide for ten or fifteen minutes without experiencing unpleasant effects. Others feel slight vertigo after inhaling for a minute or two. Ordinarily, I tell the patient to inhale for five minutes, unless vertigo is produced.

REFERENCES.—[1] "Medical News;" "Medical Record," Nov. 4, 1893.

FERRATIN.

This is the name given by Prof. Schmiedeberg, of Strasburg, to that combination of iron which is found in the normal tissues, and which is stored up in the latter as a reserve from which may be drawn for the formation of blood. Prof. Schmiedeberg has succeeded in producing this substance by artificial means, in the form of a fine powder of red-brown colour like oxide of iron. Two forms of this substance are known to commerce: the one simple and insoluble in water; the other is a sodium compound which readily dissolves on stirring after being allowed to stand for a little time in water. (N.B.—The latter must be as free as possible from lime, otherwise an insoluble calcium compound is formed.) Ferratin, in contradis-

tinction to those compounds of iron hitherto in use, is readily assimilated and does not produce any unpleasant disturbances in either the gastric or enteric functions, even when used for a lengthy period; indeed in some cases its exhibition seems to produce improvement in the appetite and conduce to regularity in defecation. As a portion of the substance is decomposed by the acid gastric juice, and also by sulphuretted hydrogen, a sufficient quantity of ferratin must be ingested to leave an overplus in the bowel-tract, so that the organism may pick up as much as it requires. There is no necessity whatever to anticipate overloading of the organism with the iron, as absorption and excretion appear to be mutually controlling. Excretion does not take place through the kidneys. The daily dose for children is grs. 1½ to 8; for adults, grs. 15 to 22. Acids should be avoided, but no other ascetic restrictions are necessary. Prof. Schmiedeberg points out that ferratin is first and foremost a food, and its use is indicated in all cases in which nutrition and the formation of blood are unsatisfactory. For the present its therapeutic uses must be limited to those of other iron compounds, though further information on this and other points is promised.

REFERENCE.—[1] "Centralblatt f. klin. Med., No. 45, p. 953, 1893.

GALLANOL.

This white crystalline compound is derived from tannin and aniline. It is chiefly indicated for external application. It causes no irritating effect upon the skin, to which it may be applied in the form of powder. It has been used with advantage in cases of **Psoriasis** and **Eczema**, in the form of a pomade with soft paraffin basis; and it is said to be preferable to chrysophanic and pyrogallic acids.

A recent number of the "Lyon médical" contains the report of a series of exhaustive experiments by MM. P. Cazeneuve, Rollet, and Nicolas to ascertain the germicidal value of gallanol. The action of the drug was tested on five microbes, that of anthrax, the *Staphylococcus aureus*, the *Bacillus pyocyaneus*, the Eberth germ, and the *Bacillus coli communis*. The experimenters arrived at the conclusions that gallanol in excess completely destroyed the vitality of the micro-organisms, that in a relatively weak solution their development was diminished, and that in an attenuated solution, while their growth was not materially affected, their pathogenic powers were destroyed. It was shown that the drug was an invaluable remedy in the vegetable parasitic diseases; while destructive to the micro-organisms, it was perfectly non toxic to the general system. Gallanol possessed such active germicidal properties that there was no doubt that it could be

employed with great benefit in the infectious diseases as an abortive remedy.

REFERENCE.—"Pharm. Journ. and Transact.," p. 888, 1893; "New York Med. Journ.," March 24, 1894.

GLYCERO-PHOSPHATES.

Dr. A. Robin[1] has employed the glycero-phosphates of calcium, sodium, potassium, etc., either alone or in combination, administering them by the mouth or by subcutaneous injection.

In a case of **Neurasthenia** he found that subcutaneous injection of 4 grains glycero-phosphate of calcium increased not only the total solids in the urine, but, individually, the urea from 23·5 to 31·73 per cent., the co-efficients of nitrogen oxidation from 80·7 to 84 per cent., the co-efficients of sulphur oxidation from 87 to 90 per cent., as well as the proportion of chlorides, sulphates, lime, magnesia and potash. On uric acid it does not appear to have any appreciable influence, and it affects the quantity of incompletely oxidised phosphorus only to a slight extent, tending, if anything, to lower the proportion.

As a result of clinical experience he concludes that the glycero-phosphates improve the general nutrition of the nervous system, and are particularly indicated for **Nervous Depression, Phosphatic Albuminuria,** and **Phosphoruria.**

REFERENCE.—[1] "Therapist," August 15, 1894.

GRINDELIA ROBUSTA.

M. Jasicwicz[1] has for some time employed this drug in affections of the respiratory tract, and finds that it exercises a remarkable action in **Dyspnœa.** He is not prepared to say that it has any utility in bronchitis, but asserts it possesses real value in disorders of nervous origin, as **Asthma** and the croupy cough of **Laryngismus Stridulus**—in a word, it is valuable in all the spasmodic phenomena of respiration, its action being comparable to that of belladonna, with the notable exception that it never develops toxic effects. It is further observed that the action of grindelia robusta is more rapid than that of belladonna.

REFERENCE.—[1] "Mercredi Médical," Dec. 7, 1893.

GUAIACOL.

Some very interesting experiments have been undertaken by Drs. M. G. Linossier and M. M. Landois[1] in respect to the absorption of guaiacol by the skin. These experiments give undoubted proof that guaiacol is much more readily absorbed into the system after being painted on the skin, than it is when inhaled by the mouth. Thus, "A

napkin, impregnated with guaiacol, was held from ten in the morning until four in the afternoon before the mouth of a young patient convalescent from **Typhoid Fever,** who showed very marked thermic elevations in connection with subcutaneous abscesses. At the end of that time, the urine contained only 0·1 in 1,000 of guaiacol. Several days afterward the right thigh was painted with 30 grains of guaiacol, many precautions being taken to prevent pulmonary absorption, and the painted part immediately covered with an impermeable fabric. During this time the patient breathed behind a screen. Six hours after the painting the urine showed 0·9 in 1,000 of guaiacol, and the temperature had fallen two degrees.

The extent of the surface on which the guaiacol is painted also produces a great difference of effect. In the same patient 30 grains were painted first on a surface of a hundred and eighty square centimètres, and afterward on three hundred square centimètres. In the first case, after three hours, the urine contained 9 grains of guaiacol, and the second, after two hours 33 grains in 1,000.

Absorption seemed to be more rapid on the thorax than on the limbs ; in this respect, certain conditions also must be taken into account, such as age, sex, nature of the skin, etc. After repeated experiments the authors have come to the following conclusions : (1,) Guaiacol applied by painting is absorbed by the skin, and this absorption is produced, at least in a great measure, by its vaporous state ; (2,) The absorption is very rapid ; fifteen minutes after painting, the medicament may be detected in the urine. During an hour and a half the proportion increases little by little, and attains its maximum in from an hour and a half to four hours. The elimination is nearly complete in twenty-four hours ; (3,) After twenty-four hours the total quantity of 55·5 per cent. of guaiacol may be found, after the skin has been painted with from 30 to 60 grains of guaiacol. The absolute quantity found in the urine has been as much as 32 grains after an application of 60 grains, and 50 grains after an application of 150 grains ; (4,) Cutaneous absorption is such then that it permits of saturating the organism without recourse to the digestive or subcutaneous routes.

In respect to the external application of guaiacol, Sciolla, Bard and other physicians use pure guaiacol, while others, like Desplats, mix it with glycerin or alcohol. In several cases of advanced **Phthisis.** a marked reduction of 2° has been obtained by painting the entire surface of the front of the thorax with pure guaiacol. Unfortunately, the effects of this treatment are only temporary, not lasting more than three or four days. Sometimes, also, applications of this kind pro-

duce a marked rise in temperature—in one case of 2°. It is necessary, then, in making use of this procedure to ascertain the susceptibility of the patient, and to use at first small and then progressively large doses. There have been of late years interesting attempts in the employment of this procedure. Casasovici and Miron Sigalea have used guaiacol mixed with tincture of iodine, in the treatment of **Pleurisy**, in the following proportion : Tincture of iodine, 385 grains ; Guaiacol, 75 grains. This quantity is used in a single application, and the diseased parts are thoroughly and extensively painted with it every night. These applications cause a considerable reduction of temperature, profuse perspiration, and an increased flow of urine, followed soon after by complete resorption. These results seemed to have been obtained particularly in one case, where there was abundant **Pleuritic Effusion** on the left side, in which tapping had not been followed by any relief, but had caused a considerable rise in temperature, by the application of iodized guaiacol, the fever disappearing in a few days and the effusion becoming resorbed.

M. Desplats has recently conceived the idea of applying guaiacol in the treatment of painful **Rheumatic Inflammation of the Joints**, after having observed a case in which applications of guaiacol had been used with excellent results. He has used a mixture of equal parts of guaiacol and pure glycerine. The joints were thoroughly painted with this mixture and afterward covered with a dry dressing. In one case of acute rheumatism and in three others of arthritis deformans with sharp pains, the results were excellent. The pain was completely subdued, and in the first case the patient recovered rapidly. This procedure has recently been employed in applying guaiacol for **Articular Neuralgia** of the shoulder, which was very painful, in a tuberculous patient, who experienced marked relief. It is easily employed and not dangerous, if the indications mentioned are conformed to.

There is a difficulty in masking the odour of guaiacol. Da Costa thinks that oil of cloves is, on the whole, the best to employ for this purpose. A dose of 15 to 30 drops, either alone or mixed with glycerine or other excipients, is painted on the surface and then rubbed in with the hand, the part being immediately covered with wax paper or oil-silk.

Stolzeburg[2] reminds us that its action is accompanied by profuse sweats, and that it is undesirable to continue it for any length of time.

REFERENCES.—[1] "Union Médicale," April 1, 1894 ; [2] "Berlin Klin. Woch.." No. 5, 1894.

LACTOPHENIN.

This is distinguished from phenacetin only by the fact that a lactic-acid replaces the acetic acid radicle in connection with ammonia. It is a beautiful crystalline powder, of slightly bitter taste, soluble in 330 parts of water. It has been favourably reported upon by Prof. R. von Jaksch[1] as an agent useful in **Typhoid Fever**. He states that it has an uncommonly calming effect on the typhoid patient. Delirium vanishes, the senses become clear, and, without exception, the patients rejoice in a subjective healthfulness such as von Jaksch has until now never observed under any other mode of treating typhoid. It was also noted that hunger soon occurred in all cases ; in fact, most of them as soon as lactophenin had been given a few days, and they were speedily cured.

The dose of lactophenin is 7 to 15 grains, and was administered by von Jaksch in starch capsules.

Dr. Jaquet[2], of Basle, states that lactophenin is an agreeable and reliable antipyretic effecting a distinct and persistent depression of temperature when administered in as small doses as 50 to 70 centigrammes, even in cases of stubborn **Erysipelatous Fever**; and at the same time ominous or unpleasant symptoms never intervene.

REFERENCES. —[1] "Centralblatt. für Innere Medicin," March 17, 1894 ; [2] "Medical Age," Aug. 25, 1894.

LAPPA OFFICINALIS.

This drug, which for a considerable period has enjoyed a somewhat enviable reputation among our Eclectic brethren, is now receiving general attention because of its supposed effect upon the genito-urinary apparatus. It is held to be a regulator of all menstrual irregularities, and a valuable adjunct in the treatment of **Chlorosis**. In **Amenorrhœa** it is claimed as a remedy second only, if not equal, to pure apiol. Indeed, "regardless of sex it appears to regulate the strength and functional operations of the entire sexual system." It is a general tonic, and may be utilized as an important constituent in alterative compounds. Moreover, it is an excellent synergist to salix nigra.

REFERENCE.—"Medical Age," March 10, 1894.

LAWSONIA INERMIS.

In the April number of the "Archives de Médecine et de Pharmacie Militaires" M. Ehrmann, a military pharmacist, publishes a study of this plant, the *hanneh* of the Arabs, who look upon it as a panacea. The author briefly enumerates the uses of the plant in Arabic medicine. **Fissures** are treated with a mixture of powdered

lawsonia and powdered alum. **Chancres** and other ulcerations are covered with the powdered plant, and the itch is treated in the same way. The drug is employed topically as a remedy for engorgement of the lower limbs complicated with ulceration. As an application to wounds it is considered tonic and astringent. **Wounds** with great loss of substance are treated by means of quantities of the plant, and the dressing is renewed once in three days. Contused wounds are treated with the leaves beaten and moistened with a little water. **Migraine** is treated with poultices containing the seeds and black anise. **Diarrhœa** is cured with a weak decoction of the plant. The flowers, in infusion, are remedial in migraine and in bruises ; a perfumed oil prepared from them is used as a cosmetic. An Arabian remedy for **Sterility** consists in smelling of the fresh flowers. A few leaves of the plant cast into a cup of boiling water form a drink which is believed to ward off all the unpleasant consequences of abortion. The bark, in decoction, is used for **Jaundice**, **Inflammation** of the liver, **Calculous Affections**, **Leprosy** and **Diseases of the Spinal Cord.** The fruit is considered an emmenagogue.

REFERENCE.—"New York Med. Journ.," May 12, 1894.

LORETIN.

This is another substitute for iodoform, brought forward by Schenzengler.[1] The chemical name is "meta-iod-ortho-oxy-chinolin-ana-sulfonacid." It is an iodine preparation, at the same time possessing the properties of a phenol and the important characteristic attributes of a chinolin derivative. Physically it is a yellowish powder, consisting of minute crystals and resembling iodoform, but having no odour, and only slightly soluble in water or alcohol, but forming useful emulsions with oil, collodion, etc. As a powder it is very serviceable when somewhat diluted, and with metals it forms valuable salts, the calcium salt, for instance, being insoluble in water, and a very suitable substance with which to impregnate gauze. Loretin is non-poisonous, and no untoward effects have followed its use after operations, or when used for ulcers.

REFERENCE.—[1] "Wien. Allgem. Med. Zeitung," No. 47, 1893.

MAGNESIUM SULPHATE.

Dr. J. Percy Wade, at the suggestion of Dr. Rohes, has made a study of the purgative action of magnesium sulphate when administered hypodermically. In selected cases he injected sufficient of a 2 per cent. solution of the salt to represent 1·86 to 4·5 grains. He found that one small dose, followed in a short time by a second small dose, proved more effective than a single large dose. The injections

caused no unpleasant local or constitutional disorder. The subcutaneous injection of magnesium sulphate to induce purgation would seem indicated in cases of **Gastritis**, when a purgative is required and the stomach rebels; in abdominal surgery, when the administration of a purgative by the mouth would be likely to cause vomiting; and in cases in which consciousness has been lost and swallowing is not possible.

REFERENCES.—"Practitioner,' April, 1894; "Medical News," (Philad.), p. 104, Jan. 27, 1894.

MALACINE.

This is derived from the salicylate of phenacetin, and has been brought forward as an analgesic in cases of **Rheumatism, Neuralgia**, etc. The usual claims are made for it respecting harmlessness of effect and excellency of results.

MYRRHOLINE.

This is a solution of myrrh in its own weight of oil. It is said to have been found useful in **Tubercular Laryngitis**, given in capsules each containing 3 grains of myrrholine, and from $4\frac{1}{2}$ to 5 grains of creasote. An ointment of 1 part of myrrholine and 2 parts of vaseline is reported to act favourably in cases of **Eczema** about the nostrils.

REFERENCES.—"Revue internationale de bibliographie médicale pharmaceutique et vétérinaire"; "New York Med. Journ.," July 21, 1894.

NAJA TRIPUDIANS.

At the present moment, when organic extracts, concerning the physiological effects of which we have no definite knowledge, are so largely employed, it is curious that the serpent poisons are so much neglected.

The poisons of the rattle-snake and cobra (crotalus and naja) have such a decisive action on the human body, and produce effects that are so peculiarly their own, that their use in some of the more serious disturbances of organic life could easily be prognosticated, if they had not been already tested. There is no fact better proved than that dilute solutions of serpent venom are capable of producing physiological effects even when given by the mouth, and very rapid effects when such solutions are applied by hypodermic injection or to abraided surfaces on the skin.

Dr. John W. Hayward[1], whose article on Crotalus is the most complete work of reference on this subject in any language, remarks that "the sudden and extreme coldness and blueness (which follows the serpent's bite), the collapse, choleraic state, cramps and diarrhœa,

and vomiting, embarrassed respiration, scarcely perceptible pulse, suppression of urine, and speedy death, or consecutive fever, afford very strong evidence in favour of the use of crotalus in many cases of, at least sporadic, if not true Asiatic cholera, and it will certainly be indicated when the attack has resulted from septic influence."

The following paragraph which appears in the "Medical Age,"[2] is of some interest in this connection: "A. L. Sandel, M.B., Municipal Commissioner, Calcutta, and late medical officer to the local government, Bengal, declares the empirical practitioner in India has wonderful success in combating the ravages of **Cholera.** Case after case given up by the faculty as hopeless is taken up and successfully treated by him. . . . . I managed to elicit the fact that the powerful agent employed subcutaneously was a tincture of which the the poison of the cobra formed the sole base. . . . Later, I discovered a woman in possession of a small supply of the tincture, and her success in treating cholera cases was, on a smaller scale, as striking as his.

"I could not help reviewing the astounding fact that many eminent medical men of this city repeatedly found in their practice that cases of cholera given up by them as hopeless were cured, provided a certain charlatan was called in and permitted to inoculate his mysterious counter-poison, yet not one thought himself called upon to investigate the subject. I am prepared to avouch, on the honour of a professional man, my thorough conviction of the repeatedly successful treatment of hopeless cases of cholera by the inoculation of the sufferer with cobra venom."

Among other disorders in which crotalus and naja in their dilute form have been used with great snccess are **Yellow Fever** and **Septicæmia.**

Recent experiments made by Dr. Chas. B. Ewing (see also article "Blood Serum," p. 12), prove that when an animal is killed by serpent venom, there is an extraordinary diminution in the natural germicidal power possessed by the blood, and that this accounts for the rapid putrefaction of animals so poisoned. It would be of great interest if further experiments were undertaken to determine whether any *increase* of the germicidal power of the blood takes place when the virus is injected in its attenuated form. Such action is not improbable, for the experiments with calcium chloride (*vide* p. 15) show that while full doses diminish the coagulability of the blood, smaller doses increase it. If this were the case it would give us a working hypothesis by which to account for the actual good results which have been witnessed both in septicæmia and cholera by the use of attenuated solutions of ser-

pent venom. It would of course be necessary to compare the germicidal action of blood taken from an animal debilitated by some septic disorder, both before and after the administration of the serpent venom. It is not to be expected that either serpent venom, or other drug or poison will increase the germicidal power of the serum in the healthy animal; but it is possible to believe that when the organic centres upon which this power depends are weakened, the agent which has the power to paralyze them has also the power to give them the stimulation which they need. A 1 to 1000 solution of both crotalus and naja (prepared with glycerine) are easily obtainable, and it would be of great interest if further experimental and clinical evidence could be obtained on these points.

REFERENCES.—[1] "Materia Medica, Physiological and Applied"; [2] "Medical Age," Jan. 1, 1894.

NAPHTHOLATE OF SODIUM (Microcidine).

This is the product of sodium hydrate or β-Naphthol. It is recommended by Cozzolino of Naples as a valuable **Antiseptic** and anti-suppurative in **Ear** and **Nose Diseases.** It is odourless, unaltered by contact with instruments or tissues, soluble in water in the proportion of 1 to 3, forming a brownish solution when strong, but is alkaline in reaction, and nearly colourless and tasteless in the usual 3 to 4 per cent. solution. The powder should be kept from the light, but the solutions demand no precautions. Experience in other medical fields has shown the 3 per cent. solution to be as efficacious as 1 to 2000 sublimate solutions, and in the ear Cozzolino has found it twice as prompt in ending suppuration as boric solutions, using it by irrigation to secure full washing away of all discharge. In the nose he employs it in ·5 to 2 per cent. solution or in a weak ointment, and claims brilliant results for it here, as well as in tonsillar troubles.

REFERENCES.—"Annales de l'Oreilli," Nov. 1893, "Therap. Gazette," May, 1894.

NEURODIN.

This is the registrable name applied to acetyl-p-oxyphenylurethan, a substance which has been manufactured as an "antipyretic and anti-neuralgic." The usual claims are made for it in respect to efficacy and freedom from unpleasant symptoms.

NITRO-GLYCERINE.

Relief of pain in a case of **Sciatica** has been obtained by the use of 1 drop-doses of the 1 per cent. solution of this remedy repeated three times a day, by Dr. Laurence.[1] This was evidently a case of pure neuralgic sciatica, in which the stimulation of the circulation relieved

the exhaustion of the nerve. The remedy would not be likely to prove of benefit in sciatica of the rheumatic type.

REFERENCE.—[1] "Revista de Ciencias Medical de Barcelona."

NUCLEINS (The).

Experiments have been made with nuclein obtained from yeast, eggs, the spleen, the thyroid gland, and the testes, and all of them have been found to be distinctly bactericidal. It has been demonstrated that the germicidal constituent of blood serum is a nuclein which is undoubtedly furnished by the multinuclear white corpuscles. When it had been shown that the nucleins were germicidal, it remained to be seen whether or not they might be used to prevent or arrest the growth of germs in the animal body.

Dr. Vaughan in an address delivered before the Illinois State Medical Society, stated that in tuberculous patients the effect of repeated injections has been a lowering of the temperature. He has used daily injections of the nuclein for six months or more without observing any injurious effects from their continuous use. In twelve cases of **Membranous Amygdalitis** he employed the nucleins alone with good results, the fever disappearing within twenty-four or forty-eight hours at the most. In four cases of **Streptococcus Diphtheria** good results were also obtained from their employment. Still another case where it was used successfully was that of a man who had been under treatment for an **Indolent Ulcer** of the leg. After other measures had been tried, the nuclein was used alone, and 80 minims of a 2 per cent. solution of yeast nuclein were injected into the tissues around the ulcer. Eight injections were made, and the ulcer healed perfectly. Two months have passed since the last treatment, and there has been no return of the trouble.

REFERENCE.—"New York Medical Journal," June 16, 1894.

NUX JUGLANS.

The leaves of the Walnut Tree made into a decoction and drunk by the cupful as a tea, have long had a popular reputation in the treatment of **Scrofula.** Washes and baths of the same decoction are also used to aid recovery.

G. P. Rodionoff,[1] of Moscow, on the ground of extensive observations of five years' duration, recommends the adoption of this mode of treatment, which has yielded excellent results in his hands. He finds it very beneficial for the eruptions and enlarged glands.

REFERENCE.—[1] "Meditzinskoie Obozrenie," No. 2, 1894.

OXYGEN.

Mr. J. N. Pitt's conclusions on the use of this agent are as follows :—

(1,) The inhalation of oxygen is of marvellous value in some cases of severe **Pneumonia,** especially when there is much lividity and cardiac failure, and at the crisis.

It fails in other cases, and the writer is inclined to suggest that where the condition is one mainly of **Cardiac Failure** and collapse, more benefit is obtained than in cases where the serious condition is especially due to a wide-spread œdema or **Bronchitis;** but on this difference between the two classes of cases he would be glad to learn the experience of others.

Some cases of severe bronchitis and **Asthma** have however, been benefited by oxygen. In one case of acute upon chronic bronchitis in an elderly lady, he saw some, though not very marked, relief of the dyspnœa.

(2,) In cases of **Empyema, Pneumothorax,** and **Pleuritic Effusion,** great relief can be afforded to the dyspnœa and cardiac failure until operative measures are undertaken.

(3,) Cases of feeble patients with **Phthisis** may be relieved, but more often there is no marked change.

(4,) Cases of weakly convalescents and feeble cardiac cases will often derive great benefit, and inhalations may be given periodically for weeks ; but oxygen will not restore to health ; it must simply be used as an adjuvant.

(5,) Cases of **Chlorosis,** pernicious anæmia, and leucocythæmia, receive great temporary benefit, but the oxygen must be supplemented by other drugs.

(6,) Conditions of asphyxia and lividity from respiratory engorgement due to cerebral failure, and also coma from various causes, may be relieved.

(7,) Its value in uræmia, though insisted upon by French writers, is still problematical.

(8,) It may be of value in diminishing the risks of anæsthesia.

REFERENCES.—"Medical Press and Circular," January 24, 1894. "Therap. Gazette," March, 1894.

OXY-VASELINE (or Vasogene).

This substance resembles vaseline, but it forms with water, a permanent whitish emulsion. It has a peculiar but not very disagreeable odour and taste.

Bayer states that it is perfectly innocuous. It is claimed that the substance contains the active principles of hydrocarbons which are frequently used for ordinary vaselines.

Bayer describes a number of cases treated with iodoformated and creasotated vasogene, but they give the impression of claiming too much for the excipient. We expect to hear more of this agent from a commercial standpoint.

OZONE.

Dr. Thompson of New York has made a number of experiments with ozonizing agents, both given by the stomach, and administered by direct injection into the intestine or the blood.

He concludes as follows :—

(1,) When injected in the circulation in full strength—*i.e.*, 15 volumes per cent.—they have a very destructive action upon the blood, thereby ultimately having the effect of reducing rather than of oxidizing agents for the tissues.

(2,) Acting through the stomach or intestine, they may similarly affect the blood, and in addition they destroy the gastric and intestinal mucous membrane.

(3,) Given in medicinal doses by the stomach, their only benefit, if any, consists purely in their local action in the alimentary canal, in possibly preventing abnormal fermentations.

(4,) If so used, care should be exercised, owing to the great variability in strength of different preparations.

(5,) Ozone is of no real value to the tissues, whether inhaled or drunk in fluid preparations, and it may be exceedingly harmful.

REFERENCE.—"Medical Record," March 3, 1894.

PENTAL.

At the Kaiser Friedreich Children's Hospital, Berlin, chloroform and pental have been the only anæsthetics used during the last twelve months. Phillip states that local anodynes having been found impracticable in the case of children, the following were found to be the principal advantages of pental : Extraordinarily rapid narcosis ; rarity of a period of excitement, which, if present, ceased with absolute narcosis; immediate recovery of consciousness after removal of the mass ; and absence of any unpleasant after-effects, such as are caused by chloroform. No action on the heart was ever observed, but in some patients arrest of respiration and cyanosis occasionally appeared, when removal of the mask sufficed to restore the natural colour. The author attributes the cyanosis, not to any toxic action on the respiratory centre, but to tonic contractions of the diaphragm and glottis. In twenty-one cases the urine was subsequently examined for albumin, but only once was a trace found, which disappeared on the third day ; this occurred in a tuberculous child after a prolonged operation. The majority of

the operations lasted from ten to thirty minutes, from thirty to sixty cubic centimètres of pental being required.

He considers that pental is less dangerous than chloroform, and freer from after effects. It should, however, be used with all the precautions usual in the case of the former anæsthetic.

REFERENCE.—"Zeitschrift f. Kinderheilk" Bd. iii.

PEPSIN.

The value of this drug as a therapeutic agent in *surgical* practice forms the subject of an article by Dr. Thomas O. Summers.[1]

Pepsin possesses the power of separating non-vital from vital tissues, the *débris* of cell action from the cell itself. "No one," says Dr. Summers, "who has not seen the change produced by the thorough peptonization of the whole surface of a jagged, lazy, indolent **Ulcer** that has resisted every effort to excite granulation and awaken the dull vitality of the surrounding tissues can fully appreciate the immense possibilities of such an agent. The pale, livid edges light up with the reddening fires of vitality, wavelets of granulation swell up over the surface of the lesion, and soon healthy tissue reaches out cellular arms across the chasm and repair is rapid and complete."

It has also been used in **Eczema** with very remarkable results, the skin being thoroughly saturated with pure pepsin. The *saturation* of the skin, and the purity of the pepsin are points which the author strongly emphasises. The author has used soluble bougies prepared with pepsin with very great advantage in the treatment of **Gonorrhœa** recommended by Dr. Summers :—

(1,) Wash out the urethra thoroughly (always after urinating) with plain hot water, as hot as may well be borne ; (2,) With a syringe having a soft rubber, conical-shaped nozzle inject the following :—

Injection No. 1—

℞ Pepsin (pure) ... ... ʒ ij | Infus. Vaccin. Macrocarp. (made from cranberries)... ℥ j
Ac. Boracici ... ...gr. xx | Aq. dest. ... ... ℥ iij

M. Sig. Inject every three hours the first day.

Injection No. 2—

℞ Pepsin (pure) ... ... ʒ ij | Aq. dest. ... ... ℥ iv
Zinci acetatis ... ... gr. x

M. Sig. Inject every three hours the second day.

After this, alternate the prescriptions until entirely cured, using the ordinary dietetic measures indicated in such troubles.

REFERENCE.—[1] "New York Med. Journal," Feb. 3, 1894.

PHOSPHORUS.

Dr. Q. Thornton, after recounting the disadvantages of phosphorus in the vitreous form, suggests the use of the amorphous or red variety. This is made by heating the vitreous variety to 250° C. in the absence of air, and possesses the following advantages over the official variety: It does not readily undergo change at ordinary temperatures; it is almost entirely without taste or odour, therefore it can readily be made into pills at a moment's notice; it is free from irritant or caustic effect, consequently it is far less liable to give rise to irritation or inflammation of the gastro-intestinal and genito-urinary tract; but its greatest advantage lies in the fact that it is non-toxic, and therefore far safer.

That it has the same physiological effect as ordinary phosphorus seems to be proved beyond doubt by Kelly, who, while experimenting upon himself to determine if it was toxic, experienced the full physiological effects of vitreous phosphorus.

PHULLUAH.

Mr. E. C. Beddell[1] describes this as an oily substance obtained from a plant that grows wild on the hills about Nani Tal. In its fresh state it resembles small white balls of about the size of areca nuts. It melts on exposure to heat. When kept for some time in its liquid form, it becomes of a dirty-brown colour. It is largely used among the tribes of the hills for the cure of frostbites and chilblains. The author has found the topical use of phulluah very beneficial in rheumatism, sprains, sciatica, and chilblains, and he is inclined to think that it would do good services in cases of gout, but as yet he has not had the opportunity of giving it a trial. He adds that it has never failed to produce the desired effect where other local applications have been practically valueless. Its action seems to him to be **Stimulant, Emollient,** powerfully **Anodyne**, and **Antiseptic.** It is best to heat the crude drug and then use it like an ordinary liniment by friction.

The writer describes a case of **Hemiplegia,** where rapid results followed the use of phulluah and masaage.

Reference.—[1] "Indian Med. Record," Nov. 16, 1893.

PIXOL.

This is another new disinfectant, but it differs from the rest in the fact that it is *not* a proprietary article; it is cheap and easily manufactured.

It is prepared by disolving a pound of green soap in three pounds of tar and slowly adding a solution of a little over three ounces and a half of either potash or soda in three pounds of water. At the time of using, 1 part of the syrupy liquid thus formed is added to 19 parts

of water, forming a 5 per cent. solution of pixol, and it is used of this strength for disinfecting linen and for washing the hands; for the disinfection of dejecta a 10 per cent. solution is recommended. Such a solution has been proved to be fatal to the *Bacillus anthracis*, to the bacilli of typhoid fever and cholera, and to the cocci of suppuration.

This information is afforded in a supplement to the "Army Medical Journal" (Russia), by Dr. Eberman.

POTASSIUM BICHROMATE.

In an article on this drug in our last issue (p. 33), after describing the valuable results we had obtained from it in various respiratory troubles, we stated that "in chronic gastric catarrh with yellow coated tongue, and local tenderness over the epigastrium, it is one of the most valuable of remedies, and many cases closely resembling gastric ulcer have cleared up under its use."

This paragraph is confirmed by the paper which has since been read before the International Medical Congress at Rome, by Prof. Frazer, of Edinburgh.

Prof. Frazer's paper consists of a series of carefully recorded cases proving the undoubted efficacy which this salt possesses in the form of chronic gastritis, bordering upon gastric ulcer. He also records a series of ten cases diagnosed as **Gastric Ulcer**, which yielded very satisfactory results with this remedy.

The following is a summary of the mode of treatment: "While the doses administered in the above cases have varied from $\frac{1}{12}$ gr. to $\frac{1}{6}$ gr. (from 0·005 to 0·01 gramme) thrice daily, it will be observed that in the greatest number of the cases the smallest of these doses was administered, and was found sufficient. The dose should be given during fasting, and in as empty a condition of the stomach as possible. The administration was effected in the form of pill or solution; and no difficulty was experienced by the patient in the taking of a simple solution in water, although occasionally, and especially with the larger doses, flavouring agents were added, such as syrup of tolu or of orange. An examination of these records shows that bichromate of potassium is capable of relieving, and often in a short time of removing, the entire group of symptoms—if we except constipation and anæmia—encountered in **Dyspepsia**, and especially pain, nausea, vomiting and gastric tenderness. Taking into account the supposed relationship between disorders of the alimentary canal and anæmia, it might by some have been expected that an agent which is decidedly curative in dyspepsia would, at the same time, exert a curative influence in anæmia. Several of my cases, however, have shown that this is not so, and have thus given evidence that the therapeutic benefit is

the result of an action restricted to the stomach. Case 18 (Group 1) serves to illustrate this. On Oct. 12th, when treatment with bichromate of potassium was commenced, an examination of the blood showed that the hæmocytes numbered 4,300,000, and that the hæmoglobin amounted to 40 per cent. All gastric symptoms had disappeared on October 21st, when the hæmocytes numbered 4,100,000, and the hæmoglobin amounted to 38 per cent.. Bichromate of potassium was continued until Nov. 16, and even then, although the patient had for some time been eating well and had gained weight, the hæmocytes numbered 3,700,000 and the hæmoglobin amounted to 52 per cent. On this date ferrous chloride was substituted for bichromate of potassium, and on Nov. 25th the hæmocytes numbered 5,000,000, and the hæmoglobin amounted to 79 per cent.

"In a few cases of acute gastric ulceration with hæmatemesis in which I have given bichromate of potassium the results were not favourable, as it did not succeed in checking the bleeding."

We miss from Prof. Frazer's article any account of the method of reasoning which induced him to use this salt so frequently in the treatment of gastric affections. Our knowledge of its action has chiefly been derived from its poisonous effects upon the workmen engaged in its manufacture for commercial purposes. We find that these workmen suffer from sore throat, the fauces are red and injected, the tongue thickly coated, they have sour eructations and frequently suffer from heartburn, they complain of fulness and weight upon the stomach, which is tender on pressure. Most of them suffer from nausea, many from vomiting, while others may even have dysenteric purging.

It does not appear probable, therefore, that an agent capable of producing such symptoms upon healthy men would come to the front as a remedy for chronic gastric catarrh, and gastric ulcer; but this result has happened, and justifies what we have said in the introduction to this section concerning the inadvisability of limiting the possibilities of therapeutic advance.

The effects obtained by Prof. Frazer were obviously due to the effect of the stimulant action of the remedy, which is the reverse of its depressant action. It would be only neeessary to increase very slightly the dose mentioned by the author to produce serious aggravation of the disorder, and as practitioners have been so long trained in the belief that the remedial effect of a remedy increases with the dose, mistakes are likely to arise unless the principles governing the application of such remedies are clearly understood.

PRUNUS VIRGINIANA.

The American wild cherry as a **Cardiac Tonic** was mentioned by Dr. Seymour Taylor[1] in a recent lecture. He says :—

"My attention was first called to it some years back by an article in one of the journals by Dr. Clifford Allbutt. I can reiterate all that he says in praise of the drug. It relieves the flagging and distended ventricle of the chronic bronchitic, it stimulates the flapping chambers of the anæmic, and it increases the muscular tone in subjects recovering from fever and other exhausting diseases. It is also given with great advantage in the irritable 'convulsive' heart of the over-worked man of feeble physique. It is especially useful in dilatation of the right heart, whether as a result of chronic bronchitis or of mitral stenosis. I use it more in private than in hospital practice; and perhaps no drug has brought me so much credit."

REFERENCES.—[1] "Clinical Journ."; "Med. Record," July 7, 1894.

QUININE (Hydrochloro-Sulphate of).

This substance crystallises in prisms, and makes an amber-coloured solution with water. Its special advantage is said to be its remarkable solubility, one gramme dissolving in one gramme of water. It has been brought forward as the most suitable salt for hypodermic injection by Hernandez Briz.[1] Particulars of the mode of manufacture are not given.

REFERENCES.—[1] "Rev. de Med. y Cir."; "Pract." Feb. 22, 1894.

RUBIDIUM IODIDE.

This salt has been brought forward as a substitute for iodide of potassium. M. Vogt,[1] states that from clinical trials he found that taste was not very pronounced, and patients took it much more easily than the ordinary iodides. In a case of syphilitic brain trouble M. Vogt had been able to control the symptoms in four days without the patient complaining of the annoying effects which in her case had followed the administration of potassium iodide. The new product was applicable in cases where a prolonged treatment with iodine in small doses could not be instituted on account of the individual susceptibility of the patient.

This substance costs about three times as much as the iodide of potassium.

REFERENCES.—[1] "Union Médicale," July 4, 1894.

SALACETOL.

This is a crystalline white powder insoluble in water, and containing about 75 per cent. of salicylic acid (salol containing about 60 per cent.). It passes undissolved through the stomach, but, in contact with the

alkaline intestinal juices, it slowly releases its salicylic acid, the acetol component being at the same time converted into acetone and eliminated. Salicylic acid appears in the urine within half an hour after the administration of salacetol, and a dose of 2 grms. is completely eliminated in twenty-four hours. The mode of administration plays an important part in the determination of the completeness and rapidity of its absorption. It appears best absorbed and most rapidly eliminated if given in a purgative oil, such as castor oil. The result of trials both in hospital, and in private practice, showed that salacetol given in this manner is most useful in cases of **Choleraic Diarrhœa** and kindred affections.

Dr. Bourget,[1] who has used this agent very largely, finds it answers better than any other remedy, and considers that it is less dangerous than salol owing to the absence of phenol.

REFERENCE.—[1] "Correspond. Blatt. f. Schweizer Aertze," xxiii. No. 14.

SALUMINUM.

The term "saluminum" is applied to two compounds of alumina with salicylic acid which have been used clinically with good results by Dr. Heymann, of Berlin. One is almost insoluble in water and is called according to the German nomenclature aluminum salicylicum; the other, which is soluble in nine parts of water, is aluminum salicylicum ammoniatum, and the solution gives a neutral reaction. The effect of these substances is highly astringent. They stimulate the mucous membrane also, and are especially valuable in affections of the mouth and nose. Insufflation of the insoluble, or, better still, of the soluble, saluminum is most useful in **Ozæna**, and in cases of catarrh of the mouth a solution of 20 parts of ammoniated saluminum in 30 of water and 50 of glycerine forms a valuable paint for applying to the affected part.

REFERENCE.—"Lancet," Aug. 8, 1894.

SAPOTEN.

This is a glucoside extracted by G. Michaud[1] from the seed contained in the sapodilla plum, the fruit of *Achras Sapota*. This tree has a febrifugal bark, and diuretic and aperient seeds. The glucoside was obtained in minute crystals, melting at 240°.

REFERENCE.—[1] "Bull. of Pharmacy," May, 1894.

SAW PALMETTO.

The "Chicago Medical Times"[1] in an article on this remedy says, "The fluid extract is a **Nutrient Tonic** in advance of the compound hypophosphites, and has a special action upon the glands of the repro-

ductive organs, as the mammæ, ovaries, prostate, testes, etc.; its action is that of a great vitalizer, tending to increase their activity, to promote their secreting faculty, and adds greatly to their size. It is specially indicated in all cases of wasting of the testes, such as follows varicocele or is induced by masturbation, or which is often present in **Sexual Impotency.** In gynæcological practice it is much used to promote the growth of the mammæ; also in uterine atrophy dependent upon ovarian blight its action is unexcelled. But it is upon the prostate gland that this remedy exercises its best effects. Out of every ten men, nine have enlarged prostate, and one has atrophy of the same. Case after case of both morbid conditions could be cited in which, by means of this agent, the size of the prostate was equalized, the difficulty of micturition removed, stoppage, dribbling, lack of force, completely overcome, and improvement in sexual power steady and most gratifying. The general nervous system becomes balanced and reinvigorated."

REFERENCE.—1 "Med. Age," March 26, 1894.

SENECIO JACOBŒA.

This is the common rag-wort, which is a popular remedy for **Menstrual Disorders,** being taken as a decoction as a "female regulator."

Dr. William Murrell having prepared a tincture (1 to 10) experimented upon himself, and found no effects were produced by ½ ounce taken four times a day.

He says: "I then began giving it to women suffering from menstrual derangements, and found that it answered well in cases of amenorrhœa. My observations have not been confined to the tincture, for in many cases I have employed a 1 in 1 liquid extract. I have reason to think that this liquid extract was sometimes prepared from the senecio aureus, but I do not think that the substitution of one species for the other is a matter of any importance, as apparently they have the same action. I have also used with good results the active principle known as senecin, a dark resinous-looking substance, the minimum dose of which is 2 grains three times a day.

"I find senecio useful in those cases in which the menstrual function, having been performed regularly for some years, has been suddenly suspended as the result of exposure to cold.

"In the majority of cases the period is not re-established until the drug has been taken for ten days or a fortnight, but in one case the patient, after having missed for two months, came on unwell after six 2-drachm doses. As a rule, the patients were given only 1 drachm three times a day to begin with, the dose being gradually increased

This precaution, however, is unnecessary, and it is perfectly safe to begin with 2 drachms of the tincture, or 20 minims of the liquid extract four times a day. Either preparation is taken without difficulty, and induces neither purging nor vomiting.

"I am satisfied that senecio not only anticipates the period, but that it also increases the quantity. In many cases it relieves the accompanying pain, and not infrequently the headache from which some women suffer at those times. In one instance the administration of the drug was coincident with the disappearance of a profuse leucorrhœa from which the patient had suffered for many months."

SENNA.

Dr. Kral Dehio,[1] of Dorpat, states that the active principles of rhubarb, frangula, and senna possess very close chemical relationship, or are perhaps identical. He has experimented clinically with the cathartic acid obtained from senna by Gentz, which he believes to be more constant in its composition and more likely to be pure than that previously obtained by Kelby. He administered it to twenty-one persons, giving adults 2½ grains and children $\frac{5}{6}$ grain. This dose was somewhat too large. It did not fail in any case. The bowels were moved in the majority of cases in from eight to twelve hours, exceptionally earlier or later. In some cases it caused pain, but it was less likely to do this when it acted slowly. It appeared to act best in obstinate **Constipation.**

REFERENCES.—[1] "St. Petersburg Med. Woch," No. 27, 1893 ("Therap. Gazette," Nov. 15, 1893).

SODIUM CHLORATE.

Brissaud has obtained very remarkable results from the use of this simple agent in cases of **Cancer of the Stomach.**

The author thinks it well to anticipate the suggestion of an erroneous diagnosis. In most of his cases, in addition to the classical symptoms, there was a well-defined tumour in the gastric region. After giving chlorate of sodium in daily doses of 12, 14, and 16 grammes for about six weeks, melæna and hæmatemesis ceased entirely, cachexia disappeared, and the tumour could no longer be felt. Brissaud does not claim to be able to cure all cancers, but considers that there are certain forms which are curable by means of chlorate of sodium. Such are particularly those epitheliomata in which there is no extension of the disease to the liver or other parts, and no complication of the nature of thrombosis or phlebitis. Chlorate of sodium is less poisonous than chlorate of potassium, and is readily eliminated. The daily dose is from 8 to 16 grammes (2 to 4 drachms). Brissaud begins by giving from 8 to 10 grammes in the twenty-four hours, and

if the vomiting and hæmatemesis do not cease he increases the dose till these symptoms are controlled. He gives the drug mixed with 100 grammes of water in teaspoonfuls. The only contra-indication is the presence of albuminuria, even to a slight extent. More than 16 grammes should never be given in the twenty-four hours for fear of bulbar accidents. Brissaud suggests that chlorate of sodium may also with advantage be substituted for chlorate of potassium in the treatment of **Stomatitis**, etc.

REFERENCE.—"Gaz. Méd. de Strasbourg," May 1, 1894 ("Brit. Med. Journ.," Aug. 4, 1894).

SODIUM MONOSULPHATE.

Dr. Peyson gave 30 centigrammes of white lead to two dogs every day for twenty-three days, and then 1 gramme per diem for fifteen days, with the result that the urine contained only traces of lead. One dog was extremely ill; to it was administered a gramme of monosulphate of sodium a day, with the result that it was well in eight days. Both dogs were then killed, and on analysing their livers it was found that the animal which had taken sulphate of sodium had only traces of lead in its liver, whilst the liver of the untreated dog contained large quantities of lead.

REFERENCE.—"Journ. de Méd. de Paris," vol. i. ("Pract.", Aug., 1894).

SODIUM NITRITE.

Gordon Sharpe, from considerable experience with this drug advances the following conclusions :—

Sodium nitrite, being stable, may replace the less stable amyl and ethyl nitrites. It dilates all the arterioles rapidly, and soon relieves the heart. Disagreeable symptoms may be overcome by prescribing it with ammonia water or spirit of chloroform and small doses of morphine. It is most useful in **Anginal Affections** and in **Irregular Heart Action.** To obtain most benefit from its use it should be continued some time after all symptoms have passed off. By this means the heart is able to regain its tone and so to repair itself. The maximum dose is 4 or at most 5 grains, and generally 1 or 2 grains are enough. Graves' disease would appear to be aggravated by it. Bronchitis and asthma are not in his experience benefited by its use.

REFERENCE.—"Practitioner," May, 1894.

SPARTEINE.

David Cerna, publishes an exhaustive article on the therapeutics of this drug. From a careful study of the clinical effects of this

alkaloid he concludes that sparteine is a medicament of considerable power as a **Cardiac** and **Renal Stimulant**, second only, it appears, to digitalis. It is adduced also that sparteine possesses the peculiar advantage of not exerting a cumulative action, although one observer, Bruen, believes that it has such an action.

He considers that failure has resulted from the use of too small a dose. He has given as high a dose as ½ grain every three hours without ill effects.

REFERENCE.—"New York Med. Journ.," May 26, 1894.

SPASMOTIN (Sphacelotoxin).

This is a poisonous element of ergot; its action is characterized by causing spasms of the small arteries, which may lead to hyaline thrombosis of the latter and to gangrene of the tissues supplied by them; it also has, just as ergot itself, a stimulating effect on the pregnant uterus. Dr. Jacoby, First Assistant in the Pharmacological Institute of the University of Strassburg, succeeded in isolating this substance in chemically pure form.

The method for producing spasmotin is based on its solubility in ether and its insolubility in petroleum-ether. The spasmotin is extracted from ergot direct by ether and precipitated by addition of petroleum-ether; or the oil contained in ergot is first removed by extraction, and the spasmotin extracted by ether from the ergot. By both methods the spasmotin is obtained free from oil and other admixtures, in an undecomposed chemically pure state, as a yellow powder of amorphous appearance; it is insoluble in water, in diluted acids and petroleum-ether, but very easily soluble in ether, and in alcohol, acetic ether, benzol, etc. Spasmotin forms salts with alkalies, and may be again precipitated by carbonic acid. From benzol it may be obtained in crystals. The compound may be expressed by the formula $C_{20}H_{21}O_9$.

The pharmacological effects of ergot are inherent in spasmotin and its soda salt. The latter is suitable also for subcutaneous application, as it does not produce local disturbance of any kind.

Experiments, made in the obstetric clinic of Prof. Dr. Freund in Strassburg, proved that spasmotin yields the same effects as are obtained with secale cornutum. Doses up to one gramme may be given without hesitation; but the doses employed in satisfactory experiments so far have ranged only from 0·04 to 0·08 grm.

REFERENCE.—"Bulletin of Pharmacy," May 1894; "American Therapist."

SULPHANILIC ACID.

Professor Valentin, of Berne, warmly recommends sulphanilic acid ($C_6H_4NH_2$, SO_2, OH) as a palliative means in the treatment of **Acute Catarrhal Rhinitis**, **Laryngitis** and **Otitis Media.** The acid should be administered internally, from 2 to 4 grammes once a day. The author, however, prefers to prescribe it in the shape of a neutralized solution after the formula :—

℞ Acidi sulphanilici purissimi 10 grms. | Aquæ destillatæ 200·0 grms.
Sodii bicarbonici 8·0 grms. |

M. ft. Solutio. Dose :—From 40 to 80 grammes daily, to be taken either at once, or in two doses.

In **Acute Coryza,** in about two hours after the first dose, tumefaction of turbinated bodies, thin discharge, and congestion either very considerably decrease or disappear altogether ; in **Aural Catarrh** pain also rapidly subsides, etc. Such relief, however, mostly lasts not more than twenty-four or forty-eight hours after a dose ; hence, to prevent the recurrence of the symptoms, a systematic administration of the remedy is required. In the quantities indicated, the acid never causes any unpleasant accessory effects. Instead of the said solution, Merck's "*Natrium Sulfanilicum neutrale*" may be employed, which preparation is said to be "very cheap (*sehr billig*)," while being much purer than the ordinary saturated solution.

REFERENCES.—"Correspondenz Blatt. fuer Schweizer Aerzte," April 1, 1894; "Prov. Med. Journ.," May 1, 1894.

SUMBUL, (Musk Root).

This is, says the "Medical Reporter," (India) an excellent antispasmodic and **Nerve Tonic,** in action resembling musk and valerian. In small doses it stimulates appetite, improves digestion, allays irregular nerve action ; it is beneficial in depressed or excitable conditions of the nervous system. It may very advantageously be employed in the treatment of **Hysteria**, **Neurasthenia**, **Neuralgia,** functional irregularity of the heart, restlessness, the **Insomnia** of chronic alcoholism, and **Nervous Dyspepsia.** As most of these disorders occur in neurotic individuals—especially women—with impaired nutrition, a morbidly sensitive organization, dyspeptic difficulties, and sluggish movement of the bowels, in many instances it may be associated with nervine and laxative remedies. The dose of the fluid extract is from 5 to 30 minims.

TEUCRIN.

Several observers have reported on the value of this agent when locally injected as a remedy for local **Tuberculosis.**

Mosetig-Moorhof ("Wiener medicinische Presse") has been giving the drug a fair trial and is highly satisfied with the results. The medicament is used subcutaneously at the base of the degenerated tissue, and cures by causing sloughing of the tubercular parts. Great judgment must be exercised, it is said, both as to the quantity of the drug used and as to the number of applications; one is to be guided entirely by the slowness or rapidity of its action. The author has never seen any systematic reaction to the drug exhibited, and thinks that, employed with care, it is a very safe and sure remedy for the extirpation of local tuberculous disease.

THEOBROMINE.

Attention has been called to the value of this drug in **Mitral Diseases** by Hallopeau. Its main result appears to be the removal of the œdema of the limbs. It appears to produce some nausea and tendency to syncope, but this might be obviated if the agent is given in small doses and gradually increased.

REFERENCE.—"Union Médicale," Jan. 30, 1894.

THUJA OCCIDENTALIS.

This has been mentioned by Dr. C. L. Dana, as an excellent remedy for **Cystitis**. He gives 5 drops of the tincture every three hours.

REFERENCE.—"Medical Age," April 25, 1894.

TOLYSOL.

This is a derivative of tolypyrin brought forward by Bothe, as an analgesic and hypnotic. The taste is unpleasant, and nausea and vertigo are often produced by it.

REFERENCE.—"Munch. Med. Woch." Aug. 7, 1894.

TRICHLORACETIC ACID.

Cozzolino[1] recommends this as the best hæmostatic in **Epistaxis** arising, as such bleedings usually do, from the cartilaginous septum. He employs generally a pledget of cotton soaked with 1 per cent. or 1·5 per cent. solution, and claims slight reaction and prompt cicatrization as the result, far surpassing that following chromic acid or iron preparations.

Von Stein,[2] of Moscow, claims that the acid is an ideal **Cauterant**, although more painful than chromic acid, and less active than the galvano-cautery.

He says that the application of the crystals or concentrated solution to a bare or eschared surface prevents all putrefactive changes, almost wholly does away with febrile consequences, and promotes

rapid, comfortable healing. Further, his employment of it in **Ozæna** cases has not only speedily controlled the odour, reduced crust formation, and hastened improvement, but has even led to so decided a hypertrophic tendency of the sclerosing surfaces as to demand at times reduction by decided cauterization. In acute coryza he has employed weak solutions (1 to 1000 to 2000) by instillation or spray, with prompt and safe resolution after the brief increase of secretion, and otitic consequences have seemed especially rare in cases thus antiseptically treated.

REFERENCES.—[1] "Therap. Gazette," May, 1894; [2] "Monat. fur. Ohrenheilkunde," Jan., 1894.

TRIKRESOL.

Prof. M. Charteris of Glasgow, says: "The so-called 'crude 100 per cent.' carbolic acid is known to consist chiefly of cresols, which are, however, little soluble in water, owing to impurities of the nature of hydrocarbons, such as naphthalene and also pyridene bases. If these be removed, a clear liquid of a pleasant odour results. This liquid, called 'trikresol,' is a mixture of ortho-cresol, meta-cresol, and para-cresol. It is soluble in water to the extent of from 2·2 to 2·55 per cent., its specific gravity at 20° C. (68° F.) varies between 1042 and 1049, and its boiling point lies between 185° and 205° C. (365°—401° F.)."

After describing some experiments made upon guinea pigs and the results of bacteriological tests of trikresol and pure phenol, the author says: "It may therefore be concluded that trikresol is a three times stronger germicide than pure phenol, and that it is three times less toxic. Its advantages, consequently, for surgical purposes are very pronounced, and in all probability some combination of it with an alkaline base will in the future be prepared, which may with safety and with profit be administered internally in specific infectious diseases.

REFERENCE.—"Lancet," March 31, 1894.

VALERIANATE OF AMYL.

This is found as a natural product in cider brandy, mixed with the butyrate of amyl. It has an odour identical with that of the russet apple. Its appearance is that of a mobile liquid of the ether type, which it resembles in physiological action. It produces general arterial excitement followed by drowsiness, and if absorbed through the lungs it produces anæsthesia in the same manner as ether.

It has the power to dissolve cholesterin, and it is this that in conjunction with its anæsthetic effects has led M. Blanc to suggest its use

in **Hepatic Colic**. It will be remembered that cider has a considerable reputation as a remedy for *gravel*.

M. Blanc says: "It is less prompt than perhaps the ether in Durand's mixture, but it appears to be more lasting and more certain as a preventive. It can be agreeably used in capsules. In cases of dyspepsia, by no means uncommon in connection with hepatic disease, it may produce vomiting; in this case ether may be used at the start, or an injection of morphine may be administered. Later the valerianate of amyl may be given in $2\frac{1}{2}$-grain capsules every quarter or half hour until the crisis is passed. The drug does not act by exciting the secretion of bile, but by terminating the painful spasm of the duct by the anæsthesia which it then produces to a greater or less degree, and by entering into the circulation prevents the concretion of cholesterin in crystals. In nephritic colics it acts only as an antispasmodic and general stimulant without affecting the calculus itself, although it benefits the accompanying cystitis. Nervous troubles, gastralgic crises, colics of reflex origin (cold), intercostal neuralgias, muscular rheumatism, have been benefited. Menstrual colics are relieved and even the flow increased; and in this respect it is superior to apiol, especially as being less excitant. The dyspnœa, even of **Angina Pectoris**, diminishes under its use. In **Hysteria** it calms the convulsive manifestations, the hyperæsthesias and the neuralgias; it benefits the contractures. In **Alcoholic Delirium** it appears to have been used with success, acting better than morphine. It is very feebly poisonous; 5 or 6 capsules per day of the above-mentioned dose can be safely taken. To avoid gastric symptoms it is well to previously purge the patient, and if the treatment is to be of considerable duration a milk diet may be prescribed.

REFERENCE.—"Revue de Thérapeutique Médico-Chirurgicale," 1894.

Electro-Therapeutics.

A. D. ROCKWELL, A.M., M.D., NEW YORK.

The Faradaic Current.—There seems to be a tendency to underestimate the general therapeutic utility of the faradaic current.

Its quantity is so small as compared with the current direct from the cells, that to mechanical influences alone are attributed whatever beneficial effects follow its use, and therefore it has been urged that other mechanical methods—massage and contrivances for producing rapid vibratory movements—are equally serviceable.

This opinion proceeds from an incorrect appreciation of the true action of the faradaic current, as well as from a restricted practical experience in the use of it. One of the most common observations as to the effects of a thorough general application of the faradaic current, is a relief of muscular tire after prolonged activity, and an increase in the flexibility of limbs that have become sore and stiff after the rest following excessive and unaccustomed muscular exertion. One does not have to search far for a rational explanation of these results.

Mechanical effects are undoubtedly important. Not, however, as manifested by vigorous muscular contraction, but through molecular agitation sufficient to give passive exercise to both the superficial and the deeper tissues. In these cases there is cell exhaustion with circulatory sluggishness, and a deposit of the toxic products of metabolism—all which conditions are more or less benefited by the mechanical effects of the current. It is on this self-same principle that the faradaic current is now applied with such admirable results in chronic congestion and induration of the uterus. The blood flow in the congested organ is accelerated. A sort of circulatory drainage is established, and a healthy local action more quickly and effectually produced than by any known method. While we do not get from the faradaic current, chemical or endosmotic or exosmotic effects, we do witness physiological effects of the most pronounced character, and as these take place only by virtue of the vitality of the tissues, these physiological effects are of chief concern to the physician in the consideration of the nutritional effects of electricity. To what extent they are of mechanical origin is a question, but it is evident that we get upon the nerve structure itself—together with mechanical effects—influences of an entirely different character. Much has been said as to the progress in electro-therapeutics during the past few years, and

in some directions, especially in the realm of gynæcology, much has been accomplished. In the use of the galvanic current the advances have been considerable, due in great measure to better apparatus and instruments of precision. But so far as the faradaic current is concerned, can we say as much? In one respect, yes! The great utility of currents of high tension when applied to low resistances and especially by the bi-polar method, cannot be over-estimated. As an **Analgesic,** in uterine and abdominal pain, when passed through the low resistance of the mucous membrane, these induced currents of tension are of the greatest service, but so far as external applications of the faradaic current are concerned, I doubt whether we have advanced much either in the methods of application or in the efficiency of the apparatus. The coil of twenty years ago—the so-called continuous coil is referred to, with its two thousand feet of wire and its perfect rheotome attachment—yielded a current the essential characteristic of which as an aid to nutrition, and for general tonic effect has not yet been surpassed. The most important thing in connection with the use of electricity in medicine, in fact the fundamental idea upon which all its therapeutics is based, is its nutritional power. It is this idea which, in connection with Dr. Beard, the writer enunciated many years ago, and upon which he has based almost everything that he has said and written since. As to which of the various manifestations of electricity possesses the greatest efficiency in this direction —that is a question which will take care of itself. Opinions will differ according to the character and extent of one's experience.

Static Electricity is without doubt a most valuable addition to our armamentarium, and he who makes much use of electricity in medicine cannot afford to do without it. No one who expects to meet the demands of all the varying idiosyncrasies of the nervous system can afford to be deficient in the completeness of his electrical outfit. And yet there are in the profession many who claim proficiency in this department who are deficient both in apparatus, knowledge, and practical experience.

Now with a magnificent static apparatus in all its pyrotechnic glory, set in motion and readily controlled by an electric motor, the treatment of a patient is the simplest and easiest thing in the world both for physician and patient, and I should be glad to assure myself that it was the most efficient method of securing the tonic and nutritional effects of electricity. But after years of observation and comparative trial I regret that I cannot come to this conclusion. I say I regret it. In one sense I do, because it has the great advantage of ease of application over the general use of the faradaic current.

But in another sense it is not to be regretted. It would, indeed, be a misfortune if, in order to obtain satisfactory nutritional effects from electricity, the costly and unwieldy static apparatus was an absolute necessity.

Those who have not this apparatus and who are debarred from getting it because of its expense, may be assured that the faradaic current will accomplish all that static electricity can possibly do in the way of influencing nutrition.

The Sinusoidal Current.— The alternating sinusoidal current lately introduced into electro-therapy by D'Arsonval has elicited considerable discussion. The essential feature of this current is, that it has a uniform rise and fall of potential from zero to the maximum, and back to zero again in both directions. For this current it is claimed that it possesses greater penetrating power than the ordinary faradaic current, and that less pain attends the vigorous muscular contractions that it produces. Apostoli's conclusions as to the effects of the alternating sinusoidal current are as follows :—

(1,) Applied in the intra-uterine cavity, it is always well borne and free from danger.

(2,) Its application is followed by no painful or febrile reaction, and is, on the contrary, generally accompanied by manifest sedative effects.

(3.) It appears to have no marked action upon hæmorrhage as a symptom, but sometimes has a tendency to prolong this symptom.

(4,) It exercises a very decided effect upon the symptom pain. This action was noticeable from the very first *séance*, and most often immediately at the end of the *séance*.

(5,) It is a useful remedy in the treatment of leucorrhœa, which under its action often diminishes or disappears.

(6,) It has no appreciable effect upon hydrorrhœa or fibroma in certain cases.

(7,) Its influence upon anatomic retrogression in cases of fibroma has not yet been clearly established.

(8,) It increases the resolution of peri-uterine exudates.

Engleman has devised a faradaic apparatus for which he claims a superiority over ordinary apparatus in range, efficiency and effect, in precision and controllability.

The characteristic features of this apparatus which give to the current its controllability and extended range are :—

(1.) The use of two motive powers, or the separation of the primary flow through the coil from that which propels the interrupter ; in other words, a separation of the forces which serve to produce the interruptions and the current proper.

(2,) The interrupter, which is characterized by rapidity and controllability: (*a*,) it admits of greater rapidity of interruptions than hitherto known; thus extending the physiologic and therapeutic efficiency of the current, and (*b*,) the control of these interruptions is perfect, making record and comparision possible.

(3,) The series of secondary coils, varying in the number of winds and the thickness of the wires used, each of known physical and physiologic power, adapted to its special therapeutic purpose, for reduction and stimulation; for effects on nerve and muscle.

Engleman further remarks: While the striking physiologic effects produced by the new currents warrant us to expect valuable therapeutic results, I will merely say that I have been more than gratified by what has been so far accomplished by muscular contraction or interstitial massage in the painless stimulation of relaxed pelvic tissues by the muscle coil, the counter-irritation produced by the short fine, wire coil, and above all, the sedative effects of the long fine coil, even with interruptions of moderate rapidity. Without entering into details I will only say that the instantaneous relief obtained from the application of such currents in acute inflammatory pain has been surprising and warrants the highest expectations.

The Galvanic Current.—Interstitial or metallic electrolysis, as suggested by Gautier, is a subject of considerable interest, and will, it is to be hoped, fulfil the expectations of its author. In this method, the chemical action of the positive pole is utilized, not only for its effects upon the tissue itself, but upon the metal electrodes that are applied directly to, or inserted into, the diseased part.

In this way new salts are formed and deposited in the tissues, oxy-chloride of zinc where zinc is used as the electrode, and oxy-chloride of copper where copper is used. It is the cataphoric property of the current which carries or forces these salts, the product of electrolytic action through the surrounding tissues. The technique of this treatment cannot be entered into here, further than to say that the positive pole is alone used as the active electrode, with a current strength of from 20 to 40 milliampères. Gautier's best results have been obtained in diseases of the endometrium, although it is applicable to other gynæcological diseases, such as pelvic exudations and uterine hyperplasia. Other pathological conditions in which this method is believed to be serviceable are anal fissure, ozæna, chronic coryza, hypertrophic rhinitis, sebaceous cysts, and chronic urethritis.

The Depolarizing Electrode.—Another advance in the utilization of the galvanic current is what is termed the depolarizing method of treatment.

In 1892 Rockwell described the depolarizing electrode with experimental observations, and in 1893 detailed some suggestive clinical results following the use of the method in various forms of disease.

Briefly stated, the idea is, to altogether eliminate either one or the other pole according to the indications for treatment. By having an electrode with resistances in ohms, equal to, or greater than the resistance offered by that portion of the body between the two electrodes, the neutral point is thrown outside the body, which may at will be brought altogether under the influence of either the negative or positive pole.

By utilizing the suggestions offered by the very interesting physiological results observed in testing this electrode, it is possible to favourably modify and permanently relieve various conditions that formerly were not only not relievable by the ordinary methods of application, but were positively aggravated.

Electro-Diagnosis and Prognosis.—At a recent meeting of the New York Neurological Society, the subject of "Electrical Reactions and their value in Diagnosis and Prognosis" was discussed in elaborate detail.

The following conclusions, by Leszynsky, embrace in a general way the opinions of those who took part in the discussion :—

(1,) The value of electricity as an accessory method in diagnosis and prognosis of disease of the peripheral nerves is not so universally recognized as its importance demands.

(2,) The result of this procedure often furnishes corroborative and conclusive evidence where only a provisional diagnosis has been made.

(3,) The necessary technical skill in successfully pursuing such investigations and correctly interpreting the result can only be acquired through special study and practice.

(4,) The use of the faradaic current alone is quite sufficient for diagnostic purposes.

(5,) As a rule, the galvanic current is supplemental to the faradaic, and in the absence of faradaic irritability in nerve and muscle it is of the greatest service in prognosis.

(6,) The discovery of the reaction of degeneration is not an essential feature in the diagnosis as to the situation of the lesion.

(7,) The peripheral nerve fibres possess an inherent power of regeneration which seems almost unlimited, the length of time required for the completion of the regenerative process varying from a few weeks to seven years or more. Therefore, in severe forms of injury, the cause, degree, and character of damage to the nerve are often of

greater importance in prognosis than the demonstration of the reaction of degeneration.

(8,) The presence of reaction of degeneration, or partial reaction of degeneration, is not incompatible with the preservation of motility in the same area. This paradoxical condition has been found in cases of lead poisoning and a few others, but thus far the cause has been inexplicable.

(9,) Strong currents are only rarely necessary. The weakest current that will produce a distinctly perceptible reaction is all that is requisite.

(10,) A decrease or disappearance of faradaic irritability in nerve and muscle simply denotes an interference with the nutrition in the course of the motor tract between the multipolar cells in the anterior horn and the peripheral nerve distribution. It does not enable us to judge of the nature of the pathological process.

(11,) The character of the reactions does not differ, whether the lesion is situated in the cells of the anterior horn, the anterior nerve roots, the nerve trunks, or their ultimate distribution. The same rule holds good in reference to the various cranial motor nerves and their nuclei, such as the facial, hypoglossal, and spinal accessory nerves.

(12,) When the farado-muscular irritability is lost, no reaction can be obtained by a rapidly interrupted galvanic current.

(13,) The secondary current from an induction coil is the one generally used in testing faradaic irritability. Owing to its high electromotive force, the resistance encountered in the moistened skin may be disregarded.

(14,) The difference in the poles of the faradaic current is only a relative one, and can not be determined by the usual tests as applied to the galvanic current. The electro-motive force in the secondary coil is greater at the "break" than at the "make." The electrode that is felt to be stronger in its action is usually considered as the negative or so-called "faradaic cathode."

(15,) In some apparently healthy individuals the musculo-spiral nerve fails to react to strong currents applied with the "faradaic anode," while a comparatively weak current from the "faradaic cathode" calls forth a quick response.

(16,) In a case of undoubted peripheral paralysis the faradaic irritability may be preserved, but it almost invariably requires a stronger current to produce muscular contractions than upon the healthy side (quantitative decrease). [Dr. Leszynsky said he had never seen a case where this could not be demonstrated within a few days after the onset of the paralysis.]

(17,) The character of the muscular reaction demands attention. A slow and laboured contraction associated with decrease in faradaic irritability denotes degenerative changes.

(18,) The faradaic irritability may return in persistent cases of peripheral paralysis without any perceptible improvement in motility.

(19,) Electro-diagnosis is inapplicable in paralysis of ocular muscles.

(20,) When the farado-muscular irritability is lost upon skin excitation, its presence may be demonstrated in the muscle for a longer time by means of acupuncture.

(21,) If electricity is to be of any service in ascertaining whether the nerve trunk has been divided or not, as a result of traumatism, the examination must be made as soon after the injury as possible. We can then determine at once if special surgical interference is necessary. Should two or three weeks elapse before such examination, it will be impossible to state whether the absence of reaction is due to traumatic neuritis or to complete division of the nerve. Exploratory incision would then be called for.

(22,) The tests with the galvanic current require adequate apparatus and a working knowledge of the relationship between electromotor force, resistance and current strength. They also require much time, patience, and perseverance ; hence their unpopularity.

The Effect of Statical Electricity on Metabolism.—Truchot reports some experiments made upon his own person with the statical charge. He was charged from a Wimshurst machine to a potential estimated at 80,000 volts for fifteen minntes daily. The results observed were an increase in the frequency of the pulse, a rise in bodily temperature, and a diminution in muscular power ; the appetite increased at first, but soon fell off, and he was conscious of a feeling of languor and weakness. The same results followed a second course of treatment. He concludes that the metabolism of the tissues in health is increased and unfavourably affected by statical charging. On the other hand, in patients whose metabolic processes are imperfectly performed, and especially in neurasthenic cases, this increased metabolic activity is useful and beneficial.

The Influence of Electrical Stimulation upon the Nutrition of Muscle.—Debedat reports the results of experiments made on the muscles of young rabbits with the various kinds of electric stimulation used in medical treatment. "The experiments were made on the group of hamstring muscles ; those of the left side were stimulated in various ways daily for twenty days, four minutes a day ; those of the right side were left for purposes of comparison. At the end

of the period the animals were killed, and the muscles of the two sides carefully removed and weighed; portions were also hardened and examined microscopically. The modes of stimulation were as follows: (1,) Induction coil current, groups of shocks lasting each for one second, and followed by one second of interval; (2,) Galvanic battery current of 2 milliampères, with the same periods of stimulation and repose; (3,) Static sparks of 2 to 3 millimètres repeated every two seconds; (4,) Tetanisation of muscles for four minutes by means of an induction coil, without intervals of repose; (5,) Steady galvanic battery current for four minutes without intervals of repose. The results showed a gain of 40 per cent. in weight on the stimulated side with (1) the rhythmic induction shocks, and of 18 per cent. with (2) the rhythmic battery current. The effect of (3) the static sparks was *nil*; the prolonged tetanisation (4) caused a loss of weight; the prolonged steady battery current (5) a slight increase in weight. Adhesions had been formed between the skin and the muscle at the points of application of the electrodes in this last (5). The gain in weight was due to a true growth of the muscle; the loss was accompanied by histological evidence of damage to the muscle fibres. The author concludes that the most advantageous mode of promoting the growth of muscle by electricity is to use an induction coil, and to arrange the periods of contraction and repose of the muscle so as to approximate to the conditions of a muscle during the performance of rhythmic gymnastic movements—namely, about thirty periods of contraction and thirty of rest per minute, prolonged tetanisation being distinctly hurtful.

Exophthalmic Goitre.—Rockwell relates his experience in the treatment of forty-five cases of Basedow's disease—dating from 1876—holding that the prognosis in this disease is better than is generally believed. Fourteen of these cases either fully or approximately recovered, twenty-seven were benefited, some of them in very great degree, others only slightly, while three were in no way benefited.

Some of these cases that were much benefited relapsed and received further treatment with good results, while others have been lost sight of and their subsequent history is unknown. The electrodes used are of sculptors' clay enabling him to apply as high as from 20 to 60 milliampères to the neck. If his results in the treatment of this disease have been exceptionally good, he attributes it to the fact that he has not confined his efforts to the use of drugs and the galvanic current alone, but has in many instances combined with these methods the most thorough and persistent treatment by general faradization. While he considers electricity of more importance than any other

remedy in the treatment of this disease, yet in many cases the most rigid and conscientious observance of certain fixed rules in regard to eating and drinking, and the avoidance not only of excess in every department of mental and physical hygiene, and even the repression of ordinary and legitimate emotions and passions, become very essential.

Galvanization of the Brain.—Hare believes that the benefit following galvanization of the brain is due to reflex influences and not to the direct passage of the current through the brain substance. He supports this view by some experimental observations which seem to him to indicate that when a current is passed between the electrodes it does not pass through the brain substance at all, but in the direction of least resistance, namely, the scalp. This he thinks was proved experimentally by placing electrodes, one on the occiput and the other on the forehead of a large dog, and arranging a milliampère meter in the circuit. The amount of current indicated in one experiment was 5¾ milliampères. The same dog was then trephined and a needle connected with one pole of the circuit was plunged into the brain substance, the other terminal being placed as before. It was now observed that the amount of current passing was only 3¾ milliampères. In other words, the resistance, according to Hare, is less in the circuit formed by the two wet sponge-coated electrodes and the scalp, than in the circuit formed by the needle, brain substance, bones and two layers of scalp with the other sponge-coated electrode.

Dr. Deve, on the contrary, reports the following experiments, which seem sufficient to prove that electricity acts perfectly within the central portion of the brain. Upon the head of animals about to be killed two electrodes were placed at the end of the biparietal diameter, and a current of 60 milliampères passed between them. Two galvano-puncture needles, insulated to within 5 millimètres of their points were connected with an astatic galvanometer, thus forming a secondary circuit. This done, these needles, now positive and negative, were plunged into the scalp in the following positions. The primary current was 60 milliampères :—

(1,) They were plunged into the bi-polar line 5 centimètres from each electrode, when the metre of the secondary circuit, after one minute, registered 14 milliampères.

(2.) They were separated from each other on this line 4 centimètres, 1 to 11 milliampères showing.

(3.) The distance between them was doubled, 1 to 5 milliampères showing.

(4,) The positive needle in place, the other was introduced upon the occipit frontal line, 1 to 2 milliampères.

From these and other tests the following conclusions were drawn :—

(1,) The current passes through the scalp, bone and encephalon.

(2,) It is stronger in the scalp, and grows weaker by diffusion, the more rapidly when electrodes are removed furthest from the biparietal line.

(3,) It spreads itself evenly through the entire encephalic mass. Nevertheless, assuming that gray matter is a better conductor than white, it is probable that electrical intensity is greatest in the cortical layers. Then, taking for granted the storage of electrical energy, we can schematically represent the head by a sphere, on the surface of which is found the thickest part of a layer of fluid, the thinnest nearest the centre, while the middle layer will correspond to the gray cortical substance.

The greatest resistance in the passage of electricity was found in the inner table of the skull.

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Anti-Microbic Treatment.

PROF. ALFRED H. CARTER, M.D., F.R.C.P.

Recent researches have considerably extended the range of the useful application of anti-microbic treatment. No sooner was it demonstrated that infective diseases were due to living micro-organisms than efforts were naturally made forthwith to ascertain to what extent substances, which were capable of destroying micro-organisms *outside* the body, could be made to yield corresponding results on micro-organisms *within* the body. Though something has been done in this direction, practical experience soon showed that the range of application was extremely limited; and, mainly, for two reasons. In the first place there was the difficulty of bringing the germicide into direct contact with offending micro-organisms distributed in the blood, or deeply localised in the tissues and organs of the body. Secondly, there was the difficulty of finding a germicide of requisite energy which was free from toxic and irritant properties.

Anti-microbic treatment for the majority of infectious disorders has thus come to be regarded by many as either useless or of very secondary value. In opposition to this view, it must be remembered that germicidal preparations may be used with great advantage in the treatment of infections localised in easily accessible parts, such as the throat, mouth, and rectum. Again, there is no necessary parallelism between germicidal and toxic properties; and the prompt destruction of the malarial plasmodium by doses of quinine, which are harmless to the body generally, affords a striking confirmation of this statement.

But it is not only by the direct destruction of microbes that infective processes may be checked. Similar results may be attained by any means capable of arresting their development or of preventing their multiplication. For therapeutic purposes, in other words, antiseptic measures may be quite as serviceable as germicidal measures; and our rapidly increasing knowledge of the conditions under which microbes develop and multiply in the body, and of the causal relations existing between microbes and infective diseases, enables us to look at this matter from a much wider point of view than has hitherto been possible.

Microbes can exist in the body only when the pabulum afforded by the blood and tissues is favourable. Healthy tissues, for the most part oppose considerable resistance to microbic invasion; but this resistant power may be reduced or altogether abrogated by a variety of conditions, which may be either inherited or acquired. Various as they are, they all agree in depreciating the standard of vitality to a more or less serious extent. Acquired predisposing conditions may be grouped under the five following heads: (1,) Blood-poisoning (toxæmia); (2,) Mechanical or chemical injury; (3,) Mal-oxygenation; (4,) Deranged innervation; and (5,) Defective nutrition. Such predisposing conditions, variously combined, constitute in the vast majority of cases a necessary precedent of microbic troubles. Now it is most important for the therapeutist to bear these facts in mind, because the same conditions which favour the primary invasion of microbes, equally favour their subsequent development and multiplication, and consequently the observance of the same precautions which assist in protecting the body from the invasion of infection, will also render material assistance in arresting its progress when already started. Each succeeding year's experience tends to emphasize the importance which belongs to the treatment of predisposing causes as part of an anti-microbic *régime*.

Apart from infective diseases proper, such as the acute specific fevers, there are morbid conditions characterized by blood-poisoning in which anti-microbic treatment is of service; namely, those which are set up by the absorption of the products of gastro-intestinal putrefaction. Among them we find various substances of an alkaloidal nature, also various acids, and ammonia compounds such as leucin, tyrosin, indol, skatol, etc. Moreover, undigested ailmentary residues, and unabsorbed peptones become readily converted into products which are more or less toxic. Under ordinary circumstances toxic disturbance does not take place, because of the strongly antiseptic property of the acid gastric juice, because of the regular and progressive character of the digestive process, because the contents of the alimentary canal are not unduly delayed before their final expulsion from the body, and lastly because of the rapid elimination in the urine of the small amount of toxic matter which is actually absorbed. If in any way these natural means of protection are weakened or wanting, toxic symptoms soon follow which manifest themselves in a variety of ways.

From these considerations, therefore, we see that toxæmia from the absorption of putrefactive products deserves attention from the therapeutist not only on its own account, but also by reason of the

important relation in which it stands to infective disease proper. It is a powerful predisposing cause of infection because it depresses the vitality of the patient, and it profoundly modifies the evolution of, and impresses an unfavourable character upon, infective disease in actual progress. A most interesting and important illustration of this will be found in the article upon the pathology of typhoid fever, by Dr. Armand Ruffer, in the "Medical Annual" of 1893.

Antisepsis of the Mouth and Throat.—Rosenbach's[1] directions cannot be improved upon. "The less solid food taken, the greater should be the care with the mouth. It should be rinsed out several times a day with luke-warm water, containing a little **Common Salt** and **Tincture of Myrrh** or **Eau-de-Cologne**. With bleeding of the gums or bad teeth, powdered **Boric Acid** may be twice daily rubbed between the lips and gums. False teeth should be removed when no solid food is taken. In patients with partial loss of consciousness the mouth should be examined frequently for small sores, which, if present, should be powdered with a little boric acid; and cracks at the corners of the lips heal quickly if dried with a clean towel and treated with boric acid or vaseline."

In ulcerative stomatitis and noma, nothing answers better than the frequent application of solution of **Mercuric Perchloride** (1 in 1000).

Among other antiseptic mouth washes may be mentioned solutions of **Sodium Hyposulphite** (3 grs. to the ounce), **Borax,** and **Carbolic Acid** (3—5% applied with a brush). **Liq. Sodæ Chlorinatæ** (℥j to the pint of water) is efficient, but very unpleasant to taste. One of the most useful medicines for internal use in all forms of septic inflammation of the mouth and throat is the following:—

℞ Liq. Hydrarg. Perchlor.	℥j	Tinct. Myrrhæ	♏x
Potass. Iodidi	gr. ij	Aq. Destillat.	ad ℥j

Dose—1 to 4 teaspoonfuls every two to four hours, in small sips.

In the application of antiseptic solutions to the mouth and throat, all mucus should be previously removed as far as possible, by rinsing or swabbing with lime water, or other weak alkaline wash.

Gastric Antisepsis.—In the vast majority of cases in which putrefactive or irregular fermentation of the gastric contents occurs, the stomach is abnormally dilated, and the contents are unduly detained. The first step to be taken concerns the regulation of the diet: (1,) The bulk of the food should be as small as possible, consistently with the nutritive requirements. For this reason it should be nutritious, and not too liquid. Water should only be taken in small quantity at meal times, and the chief supply should be taken

when digestion has well advanced; (2,) The meals should be sufficiently far apart to prevent the supply of fresh food, until the digestion of the previous meal has been completed; (3,) All easily fermentable articles of food, sugars, fruits, wines, and beers, should be avoided. If alcohol is permitted, pure whisky or brandy properly diluted is least objectionable. Bread should be stale, and toasted. When digestion is very weak an exclusive milk diet is desirable—three or four pints daily, in 8 or 10 divided doses, with the addition of a little salt, to be sipped slowly. Among anti-fermentative agents, the most useful are **Bismuth Subnit.** (in frequent doses of not less than gr. x), and dilute **Hydrochloric Acid** in chloroform water (soon after food). **Salicylate of Soda, Creasote, Carbolic Acid, Naphthalin,** or **Iodoform** are useful when well tolerated; but when the stomach is already the *seat* of disease, such preparations frequently disagree and spoil the appetite.

Intestinal Antisepsis.—Among the various preparations used for this purpose, insoluble mercurials stand high, especially in the form of **Calomel.** A dose of calomel at the outset of microbic diarrhœa serves the double purpose of antisepsis and clearing out the bowel. The writer usually employs a single moderate dose in preference to repeated fractional doses, as some have recommended. In a lingering convalescence after a specific fever, with a persistence of irregular pyrexia, a brisk calomel purge is often most valuable.

The aromatic series of carbon compounds yields several useful intestinal antiseptics, of which carbolic acid, salol, naphthalin, and β-naphthol are the chief. Only the purest samples of **Carbolic Acid** are to be used, with a melting point not below 104° (Charteris). It is best given in pill form (gr. ijss in each pill) three or four times a day. If a pill cannot be taken, it may be dissolved in syrup and peppermint water.

Unfortunately carbolic is toxic, and not more than 12 or 14 minims in twenty-four hours can usually be tolerated without giving rise to trouble—the earliest signs of which are faintness and nervous depression, singing in the ears, slight deafness, formication, and clammy perspiration. Some darkening of the urine (due to the presence of pyrocatechin) is quite compatible with safety.

Salol (salicylate of phenol) may be substituted for carbolic acid. This insoluble substance passes through the stomach unchanged, but decomposes in the bowel, yielding carbolic acid, though so slowly that toxic disturbance is rare. From 30 to 40 grains in the day may be given in divided doses with safety, and larger doses have been used.

Naphthalin is one of the most satisfactory intestinal antiseptics. It has marked anti-microbic power, it is insoluble, little is absorbed, and it is not toxic. The usual dose is from gr. ij to v every four or six hours, in pill form, in malt extract, or in cachets. Larger doses may be given, but if continued are apt to upset digestion.

β-Naphthol is a powerful antiseptic. It is sparingly soluble in hot water, but soluble in olive oil (1 to 8), and in vaseline (1 to 80). For internal use it may be given similarly to naphthalin, in doses of gr. ij every four or six hours. It is wise to begin with this small dose, as occasionally it seriously irritates the stomach.

Iodoform owes its antiseptic power entirely to the fact that in the presence of organic matter it slowly decomposes and yields iodine. Apart from such decomposition it is a very feeble antiseptic. Then from its insolubility, it escapes absorption in the stomach to a considerable extent, and travels on to the intestine yielding iodine on its way. It would be one of the most efficient gastro-intestinal antiseptics, but for the drawbacks of its unpleasant smell, its liability to upset the stomach except in quite moderate doses (an average dose is gr. ij in pill form every three or four hours), and lastly, unforeseen rapid decomposition attended with symptoms of acute iodism. Fortunately, the last drawback is rare.

Charcoal, though not strictly speaking an antiseptic, has a wonderful power of absorbing and fixing toxic matters in the bowel. It has been strongly recommended in this connection by Bouchard[2], in a daily quantity of 100 grammes mixed with 1 gramme of iodoform, put up in cachets of convenient size, and distributed over the day. By this means he claims to be able to keep both the fæces and urine practically non-toxic, and speaks highly of its value in typhoid fever.

Bismuth Subnitrate is undoubtedly an extremely useful adjuvant to the intestinal antiseptics above referred to. In the writer's opinion its value chiefly depends upon its beneficial and protective action on the intestinal mucous membrane. To be of any real service it should be given in large doses. Toxic troubles are unknown.

Among other adjuvants to intestinal antisepsis mention must be made of occasional purgation with unirritating aperients, of occasional cleansing of the colon by enemata, and a carefully regulated diet.

Antisepsis of Serous Cavities.—The only circumstance under which washing out of a serous cavity is likely to occur in medical practice is in the case of an empyema discharging fœtid and putrid pus. It was formerly the custom to always wash out the pleura after tapping an empyema, but this is not only unnecessary but attended

with some dangers better avoided if possible. Some wise words of Prof. Sanderson in a lecture published a few years ago are worth a permanent remembrance. "Air enclosed in a serous cavity is harmless; water is harmless; septic organisms are harmless, provided they are rapidly absorbed. The one thing fraught with danger is that liquid which is undergoing putrefaction should remain in a cavity, which though inside the body as regards temperature, is yet outside, in so far as it is beyond the reach of living tissue." If antiseptic irrigation is thought desirable, choice may be made from the following: warm saturated solution of **Boric Acid**, or **Tincture of Iodine**, (1 in 1000), **Perchloride of Mercury** (1 in 10,000). But above everything—good drainage.

Antisepsis of the Air Passages.—Many bronchial and pulmonary diseases are benefited by measures of this kind. Various methods are open to us—directly, by dry inhalations, inhalations of medicated sprays, insufflations, and intra-pulmonary injections; indirectly, by the internal administration of substances in some degree eliminated by the lungs. For dry inhalations with an oro-nasal inhaler, such as Dr. Yeo's, equal parts of **Creasote, Guaiacol,** or **Carbolic Acid** and **Spirit of Chloroform; Tincture of Iodine** (1 part), with **Spirits of Wine** (3 parts); and **Eucalyptol** (1 part), with **Spirit of Chloroform** (8 parts), have been recommended. For spray inhalations—equal parts of watery solution of **Mercuric Biniodide** (1 in 500), and **Iodide of Potassium** (1 in 500); **Carbolic Acid** (1 in 20 to 40); **Liquor Iodi** (1 in 100 cautiously increased) may be used. It is essential that the spray employed should be as fine as possible, and the admixture of 20 per cent. of glycerine with any of the above solutions considerably retards the condensation of the spray, and thus facilitates its transmission to the ultimate air-tubes. Insufflations are obviously only applicable to the upper air passages, and are principally resorted to in the treatment of laryngeal tuberculosis. For this purpose, the best formula is **Iodoform** and **Boracic Acid** (of each gr. j), with gr. $\frac{1}{6}$ of **Morphia.** Previous cleansing of the laryngeal surface with an alkaline spray is desirable. Intra-pulmonary injections are so rarely employed in this country, and have yielded such poor results, that they may be set on one side. Some antiseptic effect upon the air passages may be indirectly obtained by the regular and persistent internal administration of **Guaiacol** or **Creasote,** which may be given best in small gelatine capsules, each containing ♏ ij. Both are unpleasant and liable to irritate the stomach and to destroy the appetite. A far more elegant preparation is the **Carbonate of Guaiacol,** an insoluble tasteless powder, of which gr. x—xv may be given in milk three or

four times daily after meals, without any unpleasant results. It is slowly decomposed in the bowel, yielding guaiacol, which is absorbed. Under a prolonged course of this drug, the author has seen the appetite improve, the weight increased, with lessened night sweats, cough, and expectoration in many cases of phthisis. **Iodoform**, in pill-form (gr. ij every four hours, gradually increased) has received much praise in some quarters. The writer believes that much of the benefit which is derived from remedies of this kind is due to efficient intestinal antisepsis, acting indirectly in the manner which has been already described.

REFERENCES.—[1] "Zeit. für Krankenpflege," April, 1894; [2] "Lectures on Auto-intoxication" (Trans.,) 1894.

Part II.—NEW TREATMENT.

A Dictionary of New Treatment in Medicine and Surgery, 1895.

ABDOMINAL INJURIES (Internal).

Gilbert Barling, M.B., F.R.C.S.

The Diagnosis and Treatment of Injuries to the Abdomen without External Wound.—Probably no class of case offers more difficulty in diagnosis and treatment than those injuries to the abdomen caused by heavy falls upon it or severe blows by blunt instruments. There is no penetrating wound, often indeed there is not even a bruise or graze to indicate that violence has been suffered, and yet frequent instances occur of such injuries in which severe and fatal damage has been inflicted on some of the abdominal contents. The difficulty of diagnosing the exact condition present is enhanced by the fact that the symptoms vary in their intensity in examples of practically the same injury; sometimes they are very pronounced and at others much less so. Again, a further difficulty is added by the possibility of violence falling on the large sympathetic plexuses in the cavity, causing such intense shock even when no viscus is damaged, as to lead to the belief that intestine may have been torn and its contents extravasated, or a soft vascular organ like the liver lacerated, with resulting severe hæmorrhage.

In briefly discussing these injuries I propose to say nothing of injuries to the bladder or to the kidneys, because by physical examination it is generally possible to determine whether the bladder has been injured, and the hæmaturia resulting from injury to the kidney localises the damaged viscus, and further, injuries of the kidney only rarely involve the peritoneal cavity. Excluding these, the lesions most often found are lacerations of the liver or spleen, with resulting severe hæmorrhage, rupture of the gall-bladder, or of the bile ducts, with escape of bile into the abdominal cavity, wound of stomach or intestine, contusion of the same leading eventually to perforation and hæmorrhage into the abdomen from tearing of mesenteric or omental vessels.

In attempting to arrive at a correct conclusion as to the exact lesion within the abdomen, it must at once be freely acknowledged that the surgeon will often be wrong in his diagnosis, and that operative proceedings resorted to for the purpose of dealing with the injury must as a rule be regarded as exploratory. The recognition of this fact does not, however, impugn the propriety of attempting to relieve by operation patients suffering from these injuries, but calls for the greatest care in formulating an opinion, and for the greatest discretion in resorting to operation. Especially is this the case in the period immediately following the infliction of the injury when the shock is often very severe, and surgical interference may bring about a fatal result which would be avoided by longer delay before operating. On the other hand it must of course be recognized that delay may mean further escape of blood or wider extravasation of alimentary contents, and so even greater danger be incurred.

Characteristic indications that any particular organ has been injured are unfortunately uncommon. The history of the accident, the locality struck, the condition of marked rigidity of the abdominal parietes, and the extreme pallor, jactitation, etc., indicating severe loss of blood, are points specially to be noticed as guides to the nature of the internal lesion.

When the violence falls upon the locality occupied by the liver or spleen, and the symptoms point to severe loss of blood, the position is one of the greatest gravity and responsibility. Although small lesions of the liver certainly, and of the spleen possibly, may heal and a complete recovery follow, the more extensive ones are very fatal within a short time of the infliction of the injury. It follows, therefore, that if any attempt is to be made to save these cases, the interference must be prompt, as the patients die simply of hæmorrhage. The only reason for greatly hesitating is the difficulty of determining whether the patient's depressed condition is due to mere shock from injury to the sympathetic nerve distribution, a condition forbidding active interference, or to hæmorrhage calling urgently for it, or to both conditions combined. It is impossible to dogmatise as to the distinctions to be made between shock, such as is above referred to, and the condition produced by severe internal bleeding. From considerable experience of this class of case, however, in a hospital with a large admission of accidents, I have formed the opinion that the existence of severe hæmorrhage may be shrewdly surmised from the extreme anæmic pallor of the patient, and extreme restlessness and jactitation; further than this I do not think it possible to go.

If laceration of the liver or spleen be suspected, and after considera-

tion of the circumstances above mentioned operative measures be determined on, the incision should be median and in the upper half of the abdomen. Blood being then found and its source discovered, further space for dealing with it may be obtained by transverse division of the abdominal walls, which should unhesitatingly be resorted to if it offers any advantage. To control the hæmorrhage from the liver we must resort either to deeply inserted, coarse sutures of catgut passing across the torn portion, or to firm packing with strips of gauze, or possibly to the use of the two combined. The actual cautery and a styptic, such as perchloride of iron, may also be used as secondary measures. In the case of a lacerated spleen the writer is not acquainted with any attempt to deal with the hæmorrhage, and though a trial might be made of deep sutures and packing, it is probable from the friable nature of the organ that they would fail to control the bleeding. Ligature of the splenic vessels and removal of the organ should certainly be performed then as the only means of controlling what would otherwise be a fatal hæmorrhage. Fortunately, the limited experience we have of splenectomy, when performed for other lesions than enlargement from leukæmia or malaria, shows that it is an operation which at all events has good immediate results. After thoroughly cleaning the abdomen by flushing with warm saline solution to get rid of blood clot, the cavity should be drained. This is especially to be remembered in the case of the liver, when bile ducts of considerable size may have been injured, leading to free escape of bile, which, unless provided with a free exit, may do harm.

This leads one naturally to refer next to injuries, the main feature of which is damage to the gall-bladder, or to the main bile ducts, in which, though the liver also may be damaged, hæmorrhage from it is not threatening, and extravasation of bile is the main cause for anxiety. When bile escapes from a ruptured gall-bladder, and usually when it escapes from a torn duct, it runs freely about the belly cavity. Occasionally when one of the ducts outside the liver is torn, the bile escapes into the sac of the lesser omentum. Some years ago I had the opportunity of watching a case of this kind in which a large well-defined fluctuating tumour presented itself in the umbilical, epigastric, and left hypochondriac regions. At the autopsy several days after the injury, two to three pints of bile were found in the cavity of the lesser omentum, and its source was a tear in the left hepatic duct, the only other lesion being a trifling injury to the liver itself. Escape of bile into the belly cavity gives rise to peritonitis, but it is not of an intense kind and may run on for many days before a fatal termination results. Indeed, it is quite probable that in some cases, in which the

amount of bile escaping is not large, recovery takes place without active interference. As indicating the escape of bile into the peritoneum, in addition to an advancing peritonitis, we have jaundice and bile in the urine. These latter may be present slightly or to an intense degree, depending apparently upon (1,) whether a small or a large escape of bile takes place; and (2,) whether it is circumscribed, as in the cavity of the lesser omentum, or lying free in the general cavity. As a rule, in cases of extravasated bile, there is no extreme urgency for operative interference immediately after an injury, but later, the conditions having been diagnosed, drainage of the abdominal cavity should be resorted to. If the patient's condition permits, it is advisable to drain at the upper part of the abdomen by a median incision which would command the portal fissure and provide a direct outlet for the bile on to the surface, and at the same time to put a second drain into the pelvis, to get rid of collected bile and peritoneal fluid and to prevent further accumulation there, if the upper drain fails to divert all the escaping bile out of the abdomen.

When the alimentary tract is injured the intestine suffers much oftener than the stomach, and the small intestine oftener than the large. The stomach doubtless escapes owing to its being protected by the thoracic parietes and the liver, and partly because of its thick walls, the large intestine because when struck from the front or laterally it is not projected against bony prominences as the small intestine is against the spine. The position of the small intestine in the central area of the abdomen, over the spinal column, and the thinness of its walls, explains, no doubt, why it is so commonly damaged by the kind of injury under discussion. The diagnosis of rupture of intestine or of stomach is correctly arrived at in a certain number of cases, but it should be made hesitatingly and with full recognition of the uncertainty attached to it. The indications are the extreme collapse and pain usually following immediately upon the injury, collapse which is so rapid in its onset that it cannot be due to hæmorrhage. The pain is often intense and agonizing, at least this appears to be usual when the rent is so large as to allow of a free escape of alimentary contents; when the rent is small, and, as is then often the case, partly blocked by the everted mucous membrane, extravasation is slight and the pain moderate. Rigidity again varies considerably, but in cases of extensive tearing it is usually very marked, the abdominal walls feeling like a board and being retracted in the early hours following the injury, as though making an effort to fix and enclose the damaged part and so prevent leaking into the peritoneum. *Local* tenderness there will also be sometimes intense, giving place later to *diffused* tenderness, with

which comes commencing distension, marking the onset of peritonitis. Vomiting occurs in a majority of cases immediately after the injury. Later, vomiting occurs in practically all cases with advancing peritonitis. The absence of vomiting must not be taken to contra-indicate rupture, and the presence in the vomit of blood in some quantity would point to the stomach as the seat of the lesion rather than the intestine. Dulness may or may not be present, but owing to the existence at times of marked retraction by the muscles, and at others of distension of the intestine from peritonitis, the conditions and degrees of resonance are very variable and are of little use in diagnosis. *Diminished* liver dulness, due to escape of gas into the peritoneal cavity from torn gut or stomach, is again of little help, as it may be simulated by distended intestine obscuring the liver. *Complete* abolition of liver dulness would be of value, as it could scarcely be due to anything else than gas leaking from the alimentary canal.

To sum up, the diagnosis of ruptured gut or stomach depends upon the history of the violence, often a sharp, severe but localised injury, the immediate collapse, the intense pain, and the retraction of the abdomen.

TREATMENT.—This consists in median section, the site of which is to some extent guided by any external evidence there may be of injury, and partly by such a condition as considerable hæmatemesis pointing to the stomach as the injured part. The abdomen being opened, the existence of a rent of any size is fairly certain at once to be shown by free gas, fluid, or semi-digested food in the peritoneum. The absence of extravasation, however, does not imply the absence of rupture. This may be so small, so nearly sealed by everted mucous membrane, or so surrounded by adjacent gut and rapidly forming adhesions, that only careful search reveals its presence, and it is just in these cases that the best results are obtained. Whether positive evidence exists or not, the rent must be systematically searched for by picking up a presenting piece of intestine, making this a fixed point and searching in one direction from it; then, if necessary, returning to it and searching in the opposite direction. The ingenious use of hydrogen gas insufflated into either rectum or stomach, as suggested by Senn, does not seem to find favour as a method of detecting a leakage from the alimentary canal: it should, however, be borne in mind that it appears to be mechanically possible, that it is safe, and that it may give *positive* evidence of the utmost value.

A rent being found, if *small*, whether it be transverse or longitudinal it can generally be closed with safety by Lembert's sutures; but a good deal of discretion should be exercised if the wound is of considerable

extent. If it be on the convex portion of the bowel, that is, away from the mesentery, a wound an inch long may probably be sutured with safety whatever its axis, but if it be on the mesenteric side of the bowel and transverse, suturing might lead to acute flexion and obstruction, while if it were in the same situation and longitudinal, the sutures would be likely to cut off the blood supply to the convex margin of the gut and so cause gangrene and perforation. Much caution is also needed in dealing with severe bruising either of mesentery or intestine. In either case bowel tissue may die from deprivation of blood supply due to laceration and thrombosis, with resulting perforation which may take place many days later. For wounds too extensive to be immediately sutured, intestinal resection, with subsequent apposition, will be needed, as will be the case also with severely bruised gut or mesentery. It might be urged that a circular rupture of the gut should be sutured without resection, but from the bruising of the edge, and, often in addition, bruising of the mesentery, union is likely to fail in part and secondary perforation occur. As to how the resection should be carried out, whether mesentery should be removed or simply sutured over, whether the intestine should be reunited with sutures only or by some mechanical means, as Senn's plate or Murphy's button, I do not propose to discuss, as it would be outside the scope of this paper.

It remains now only to say a few words as to hæmorrhage into the peritoneum from such source as torn vessels in mesentery or omentum. This doubtless occurs to a limited extent with some frequency, but not to a degree to produce symptoms. In one case, however, under my own care, a child suffered peritonitis of some severity, which appeared to be due to the presence of a few ounces of blood in the peritoneum, which was evacuated by incision. It ought to be mentioned though, that this small hæmorrhage was complicated by bruising of intestine which eight days later caused perforation, and therefore the peritonitis may have depended more upon the condition of the gut than upon the small collection of blood. When the hæmorrhage is severe, the marked collapse and evidence of loss of blood will lead the surgeon to suspect that violence has been done to some part, such as the liver. At all events, active interference will be almost entirely exploratory, and it is only when the abdomen is opened and the source of the bleeding discovered in torn omentum or mesentery that injuries to some other more important structure can be included.

The treatment consists in evacuation of the blood and washing with warm saline solution and ligature of bleeding vessels. Rents in tissue, like the omentum, should be sutured to prevent future mischief in the form of internal strangulation. Tears in the mesentery may

also call for similar treatment, but if near to the intestine and of some extent, they may require much more serious treatment in excision of a V-shaped flap of mesentery and intestine corresponding to it. The laceration of the mesentery close to the gut is most dangerous to the vitality of the latter, and it is mere trifling with danger not to recognize this and act upon it.

ABDOMINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

Although it would be difficult to say that any marked innovations have taken place in the surgery of the abdomen during the past year, distinct progress has occurred in every branch, and will be dwelt on under the special headings—Appendicitis, Gall Bladder, Hernia, Intestine, Liver, Stomach, Pancreas, Ureter, Peritonitis and Spleen.

Gastric and intestinal surgery have more especially made distinct progress, and ureteral surgery is passing from the experimental stage in animals to the practical in the operating theatre.

Abdominal Injury.—The large number of cases reported, of successful operative treatment following on severe abdominal injury with or without external wound, shows that the *laisser faire* policy in such cases is fortunately rapidly dying out. In one case reported by Dr. Wiggin[1] six inches of jejunum were successfully excised by Maunsell's method thirty hours after the accident, the rent in the bowel being small, but the adjoining gut being much bruised. A case reported by Mr. W. J. Thomas[2] and successfully treated by suture of the bowel, shows how slight an accident may be responsible for the injury, this patient giving the history that twenty-four hours previously whilst carrying a garden chair before her it suddenly struck the door-post, and her abdomen was brought with violent contact with the other side of the chair. The case also shows that the general condition may be misleading, as although distension and tenderness were present, the patient's pulse was only 80, and she was able to walk across the room and without assistance to climb on to the operating couch.

In Mr. Battle's case[3] the intestine was completely cut across at the time of accident, and lateral anastomosis by means of Senn's plates was performed. Unfortunately, however, the case ended fatally on the sixth day.

An interesting discussion on penetrating wounds of the abdomen with visceral injury followed on a paper by Dr. Stimson[4] at the New York Surgical Society, describing a case of stab wound, in which there were three separate wounds of the small intestine, two of the omentum and one of the mesentery, all of which had been closed successfully. The same surgeon also related a case of pistol wound perforating the

sigmoid flexure in two places, also successfully treated. All the speakers were in favour of early operation.

Dr. Gann[5] and Mr. Jones[6] both report remarkable cases of penetrating wound of liver treated successfully by abdominal sections, and Mr. Battle[7] contributes a case of complete transverse rupture of the common bile-duct in a boy who had been run over by a hansom cab. Unfortunately, however, operation was not performed until the seventh day, when there was general peritonitis and the patient was too ill to recover.

Rupture of Bladder.—Sieur[8] shows that the mortality from this accident has been reduced from 90 to about 54 per cent. during the past fifteen years.

An address on two cases of death from uncomplicated intra-peritoneal rupture of the urinary bladder by Dr. Joseph Coats[9] is well worthy of study, as in it are discussed the questions of: (*a*,) The absence of peritonitis, although the peritoneum contained a large amount of urine; (*b*,) The absence of inflammatory reaction in the wound of the bladder; and (*c*,) The mode of death in such cases from uræmia.

Treatment of the Pedicle in Abdominal Hysterectomy by the Intra-peritoneal Method.—In the "Brit. Med. Journ.," for Jan. 20th, 1894, we published a series of cases demonstrating the practicability of this procedure. The method employed was to tie off the appendages and to make anterior and posterior semilunar flaps from the uterus, the uterine arteries and all other vessels that could be seen being ligatured, the wedge shaped flaps apposed by buried sutures, and the peritoneum being closed by a continuous stitch from one broad ligament to another before the tourniquet was removed, after which the abdominal wound was closed without drainage. Six consecutive cases all recovering, just as an ordinary ovariotomy, leads me to say that I can safely recommend the method to others.

Fistulæ after Abdominal Section.—In the transactions of the American Gyn. Soc., Dr. Mundé[10] contributes a paper on this subject. He considers that a common explanation of such fistulæ is to be found in the character of the contents of the parts removed—for example, in cases of pyosalpinx or suppurating ovary if they burst during removal, so that pus escapes into the pelvic cavity. Dr. Mundé is of opinion that, no matter how carefully and thoroughly washing out is done, some of the pus remains and forms a focus, ultimately leading to the formation of an abscess that generally opens at the lower angle of the abdominal wound. The formation of fistulæ is also favoured by the use of the drainage tube, and is likewise frequently due to the irritation caused by the presence of an unabsorbed silk ligature at the bottom of

the sinus. Another cause of fistulæ is the incomplete removal of the diseased parts, as in cases of suppurating cyst, where some portion of the cyst wall has been left. In order to prevent the occurrence of these fistulæ it might be thought that we need only use all possible antiseptic precautions, remove the whole of the diseased and infected tissue, avoid the use of ligatures that are not likely to be absorbed, and close the abdominal wound completely. But, although careful attention to all these points will tend to diminish the frequency with which fistulæ occur in the practice of any particular operator, Dr. Mundé is of opinion that occasionally a fistula is unavoidable. As regards the treatment to promote closing of these fistulæ, supposing there is no reason to think that a foreign body, such as a silk ligature, is at the bottom of the sinus, the writer advises scraping with a sharp curette, followed by daily irrigation of the canal with weak sublimate solution and packing with iodoform gauze ; he also mentions the use of balsam of Peru, or dilute tincture of calendula (1 in 4), as likely to promote healing. In obstinate cases that do not improve under such treatment he advises drainage by the vagina, a counter-opening being made on the point of a sound or director passed to the bottom of the sinus, and a drainage tube being passed through into the vagina. The object aimed at is then to get the sinus to heal from the top, the tube being gradually drawn down into the vagina at intervals of a few days. There is a possibility of rupturing the bladder when carrying out th manipulation described, and this accident has happened three times to Dr. Mundè whilst drawing the drainage tube from the fistula into the vagina. Finally, he considers that in some cases no treatment is of any avail, and it is best to advise the patient to let well alone and "keep her sinus so long as she can live comfortably with it." In the discussion on the paper, Dr. Clement Cleveland and others called attention to the value of peroxide of hydrogen in treating these sinuses. It may be used in various strengths, one-third, one-half, and full strength, but chiefly the latter.

The Sub-Umbilical Space has been recently investigated by Dr. Fischer[11] who has demonstrated by means of injections, a space shaped like the ace of spades, having its base at the navel and its apex six c.m. below. Acute inflammations may originate in this locality, or may occur from extension from neighbouring parts leading to an acute abscess. We saw and operated on one lately in the case of a middle-aged lady, the symptoms at first being almost like those of a localised peritonitis. Although the diagnosis of these cases is somewhat difficult, the prognosis is favourable, and the treatment by free incision, the careful use of the curette, and packing with iodoform gauze, are most

satisfactory. Among other affections of this space have been noticed chronic abscess, very apt to lead to umbilical fistula and neoplasms.

Spontaneous Disappearance of Solid Abdominal Tumours after Laparotomy was the subject of a paper by Mr. Greig Smith[12] who related three cases in support of his arguments. He explained the origin of the tumours in question as the heaping up of embryonic protective cells around a minute fistulous opening communicating with intestine, and said that cure was accidental but not spontaneous, depending in one case on a diversion of intestinal contents, and in the two others on an internal opening of the fistula. This manifestly explains some of the cases in question; but there are many cases on record of the disappearance of large abdominal tumours after a simple abdominal section which cannot be explained on this hypothesis. I have myself reported cases which to all appearance were malignant, and where after laparotomy, complete and permanent recovery ensued with a gradual disappearance of the tumour. Hence the question of operation is always worth considering in doubtful cases. especially as a simple exploratory operation is almost devoid of risk.

Traumatic Intra-peritoneal Hæmorrhage.—In these cases it is usually considered necessary to find the bleeding point, but where collapse is extreme this may at times be impracticable from the fear of death on the table. A case coming under my care at the Leeds Infirmary proves that washing out with hot saline solution and drainage may at times answer all that is required. A boy of eight years, crushed by a bull between its head and some railings, was brought into hospital in a state of collapse. After a few hours he rallied a little, but it was evident both from the appearance and from the presence of dulness and fluctuation in the abdomen that internal hæmorrhage was going on. A small opening was therefore made below the umbilicus and two pints of pure blood at once flowed out, after which much more was washed out with hot saline fluid at a temp. of 110°. As the boy was too ill to permit of further exploration, a tube was inserted into the pelvis, and then was emptied as frequently as it became filled, with the result that after a few hours the hæmorrhage had ceased, the patient making an excellent recovery.

The source of the hæmorrhage was not made out, but the emptying of the abdomen gave the opportunity for coagulation to take place in the opened vessels. and saved a prolonged search which might have ended in death from shock.

Abdominal Auscultation in intestinal obstruction we have frequently found of marked service, not only in distinguishing between mechanical obstruction and peritonitis, but also in localising the site of

obstruction. Bendersky[13] advocates the use of auscultatory percussion to determine the limits of the abdominal and thoracic organs. He says that in respect to the stomach it gives the best results. A soft stethoscope is placed over the organ to be examined. When the lower limit of the stomach is reached, the percussion note is either but faintly or not at all heard. Lower, the note of the colon can be made out, and it is said that it is possible to ascertain the width of the transverse colon, and thus to recognize when it is dilated. The upper limit of the stomach can only be relatively determined. In some cases the boundaries found for the liver and spleen have been ascertained to be correct after death. Fluid in the abdomen has been found to extend one and a-half to two fingers' breadth higher than was indicated by ordinary percussion, and in the same way the cardiac dulness has been made out to be larger. Renal percussion may also thus give more accurate results. The author concludes that the boundaries, especially of the abdominal organs, and particularly of the stomach and parts of the intestine, can thus be satisfactorily ascertained. The method is specially useful if the observer be slightly deaf. The number of cases in which gastric dilatation has been incorrectly diagnosed will be diminished by this method of examination. The author describes and figures a collective stethoscope capable of being used by a number of observers at the same time.

REFERENCES.—[1] Wiggin, "New York Med. Journ.," Jan. 20, 1894; [2]Thomas "Brit. Med. Journ.," June 23, 1894; [3]Battle, "Lancet," May 5, 1894; [4]Stimson, "Annals of Surg.," Jan., 1894; [5]Gann "Lancet," June 2, 1894; [6]Jones, Ibid., May 5, 1894; [7]Battle, Ibid., April 7, 1894; [8]Sieur, "Rev. de Chir." March, 1894; [9]Joseph Coates, "Brit. Med. Journ," July 21, 1894; [10]Mundé, "Lancet," May 12, 1894; [11]Fischer, "Annals of Surg.," July, 1894; [12]Greig Smith, "Lancet," Jan. 27, 1894; [13]Bendersky, "Wien. Med. Woch.," Sept. 1, 1894, and "Brit. Med. Journ." Suppl., Sept. 29, 1894.

ABORTION.

MacEvitt[1] advocates the following plan of treatment in non-preventable miscarriage :—

(1,) **Curettement,** as a rule primary dilatation becoming necessary.

(2,) Vaginal **Tampon** and the administration of oxytocics.

(3,) **Oxytocics** with the application of an external pad and a bandage, and fluid extract of **Ergot** internally.

Curettement is now generally adopted by the progressive members of the profession, yet there is a doubt as to its always being advisable. The author prefers to keep the patient under observation for a few days before resorting to it, and thus judge of the necessity of its performance.

He thinks that the sharp curette in unskilled hands is a dangerous instrument at this time.

The old treatment of tamponing the vagina is by no means obsolete, and when properly performed has an individual value which no procedure can supplant. Packing the vagina with cotton is both useless and dangerous. The hæmorrhage is always more alarming in the early stage of the case. It is in this stage that the kite-tail tampon finds its great utility, acting not alone as a mechanical hæmostatic, but as an excitant to uterine contraction.

Morphine is administered for the double purpose of relieving the pain, softening the cervical tissue, and facilitating the dilatation of the os. If the membranes are found protruding, by a gentle twisting motion with two fingers they can generally be removed. If the membranes do not present, yet are perceptible to the touch, the os should be dilated by the finger. As soon as this can be accomplished the uterine cavity is irrigated with a 5 per cent. solution of **Carbolic Acid**, or 1 to 1000 of **Biniodide of Mercury**. When the membranes are retained beyond the reach of the finger, provided there be no fœtid discharge, vaginal douches of the same strength should be used, a kite-tail bandage should be applied, and 20-minim doses of **Ergot** should be given. This treatment is continued until the contents of the uterus are expelled, or the temperature, pulse, or discharge demand curettement.

Nicholson[2] details a case benefited by **Saline Injections** into the rectum after severe hæmorrhage following abortion.

REFERENCES.—[1] "Brooklyn Medical Journal," September, 1893; [2] "Therap. Gazette," Nov. 15, 1893.

Synopsis.—(Vol. 1894, p. 52.) For incomplete form Davis uses **Iodoform Gauze Tampon**, one end inserted inside os if possible; after dilatation **Douche Curette** is used with 1 % **Creolin** solution at 100° Fh. The tampon is applied for twenty-four hours longer, and its removal is followed by another creolin douche. Pryor treated abortion and acute peritonitis by curetting and packing the uterus with **Iodoform Gauze**. Recovery followed. Among unusual sequelæ, Wilson describes a polypoid growth due to subinvolution of the uterus at the placental site with the leakage of blood that has become organised. It occurs two weeks or more after removal of placenta, and produces sudden hæmorrhage and bearing down pains. Removal by finger or curette is indicated, together with Ergot internally to overcome subinvolution.

ABSCESS.

Synopsis.—(Vol. 1894, p. 54.) For mammary abscess, Mundé's method of compression with a large sponge gives good results. Retropharyngeal abscess should be opened by external incision along the posterior border of the sterno-mastoid, as advised by Prof. Chiene (p. 461). Fluid extract of

Teucrin is used by Prof. Moorhof in treating cold abscesses. He injects 3 ccm. deep into the subcutaneous tissues in the vicinity of the abscess under antiseptic precautions. One injection is reported sufficient (p. 42). Chotza recommends Alumnal as an application for abscesses (p. 8).

ACNE ROSACEA.

Synopsis.—(Vol. 1894, p. 57.) Galatz incises pustules, and paints for three days with: ℞ Resorcin gr. 15; Ichthyol gr. 30; Collodion ʒj. M. Ft. applicat. Stelwagon uses Ergot in cases dependent on uterine trouble. Where hyperæmia is active, lotions or ointments of **Calamine, Tannic** or **Boric Acids** with the addition in some cases of one or more grains of **Zinc Sulphate** to the oz. Destroy capillary dilatations by **Multiple Punctures** or **Electrolysis.** Schwimmer recommends: ℞ Sulphuris Præcip. β-Naphthol āā 5 parts by weight, Saponis Viridis 10 parts, Adipis Prep. 20 to 30 parts. Apply for several successive nights and for one or two hours at a time, then wash off and use a dusting powder. Free desquamation follows, and **Ichthyol** in solution is used frequently by day and as ointment by night. **Scarification** may be necessary. For marked hyperæmia **Ichthyol** is useful, *e.g.*: ℞ Saponis Viridis 50 parts by weight, Alcohol Rect. 100 parts. Solve, deinde filtra et adde Sulphuris Præcip. 5 parts.

ACNE VULGARIS. *T. Colcott Fox, M.B.*

Dr. Stephen Mackenzie in introducing a discussion on the Etiology and Treatment of Acne Vulgaris advanced the following propositions:—

(*a*,) The primary condition is a blocking of the ducts of the sebaceous glands, indicated generally by the production of comedones which leads to inflammatory changes, and frequently ends in suppuration.

(*b*,) The cause of the blocking of the ducts is due to the collection of sebaceous cells (glandular) which, owing to incomplete involution or devolution, accumulate in, and block, the ducts.

(*c*,) The inflammatory results follow from this blocking, but why such results follow with greater readiness in one case than another is open to argument; possibly an additional factor plays its part. The suppuration is probably due to the entrance of pus cocci.

(*d*,) The physiological excitation of the sebaceous glands, which accompanies the growth of the hair in connection with puberty, is the starting point of acne, and the acne lessens and finally disappears as this physiological activity subsides.

(*e*,) In the lesions of acne one or more abortive hairs are nearly always found, and it would appear that it is in those parts of the skin where the sebaceous glands are especially active, whilst the hair formation is relatively defective in development, that acne is prone to occur.

(*f*,) There is also a peculiarity of skin which predisposes to this plugging of the ducts, variously designated as opaque, doughy, coarse,

muddy, thick, sluggish, etc. Probably this does not imply any anatomical obstruction to the escape of sebum, but is associated with imperfect functional properties in the sebaceous cells, leading to their accumulation.

(*g*,) The various aberrations in the general health and disturbances of function in different organs, such as general debility, languid circulation, anæmia, derangement of the digestive or sexual functions, which are so frequently found associated with acne, are also of like common occurrence in many other patients, and probably are not direct exciting, or even contributory, causes of acne.

(*h*,) Fluxionary congestions of the face, occasioned by indigestion, the use of stimulants, changes of temperature, excitement, and exacted self-consciousness, etc., probably aggravate or exaggerate acne, when the local conditions are favourable to its occurrence, but will not produce it unless they are ready to hand.

(*i*,) The alterations of temperature to which the skin of the face is subjected must lead to irregular stimulation of its glandular apparatus, and we often see the most aggravated forms in those whose occupations expose them to unusual degrees of heat, especially when this is associated with dust. Possibly the winter season also predisposes.

TREATMENT.—Turning to the treatment, Dr. Mackenzie advised the concentration of efforts on local measures, and divided such treatment into two heads, viz., (1,) Preventive in those predisposed to acne, and (2,) The treatment of the developed disease.

Preventive Treatment.— The objects are, (1,) To remove the superfluous seborrhœic secretion, and exercise a dermatolytic action on the epidermic accumulations in and at the mouths of the sebaceous ducts; (2,) To stimulate the sebaceous glands into healthy activity; (3,) To keep the skin aseptic and thus prevent the pus cocci from gaining admission to the mouths of the follicles. In **Eichhoff's Medicated Soaps** we have cleanly, powerful, and convenient remedies. The most useful for this particular purpose are the alkaline-camphor-sulphur, Peruvian balsam, the creolin and the alkaline brimstone soaps, the alkaline sulphur and the creolin powdered soaps, and the neutral salicylic sulphur and the salicylic resorcin-sulphur powdered soaps. The face should be steamed or bathed with hot water previous to the application of the soap, and hot water used in making the lather. The soap should be used simply for washing, or rubbed in and afterwards washed off, or allowed to remain on, with or without a water-tight dressing, according to the activity of treatment demanded. Brisk towelling excites the languid circulation and compresses the

glands and ducts. This treatment must be as persistent as the condition which calls for it.

The treatment of the developed disease.—The principles are, (1,) To remove the plugs which occlude the sebaceous ducts, and the epidermic accumulations about the mouths of the follicles; (2,) To subdue any existing inflammation; (3,) To remove the conditions which, if allowed to remain, will lead to a recurrence of the disease. To fulfil these conditions all comedones should be removed by expression in conjunction with the soap treatment, which implies the application of hot water by bathing and steaming. If the skin is irritable from inflammation, such milder **Superfatted Soaps** as the menthol or the menthol eucalyptol are indicated. All pustules or indurated nodules should he punctured by the acne lancet, or in default of this should be touched with a drop of liquefied carbolic acid and then covered with collodion. Any inflammation between the acne lesions should be subdued by the applications of **Soothing Ointments** (ung. zinci benz.; ung. glyc. plumbi subacet.; ung. acid. borici; carbonate of zinc in cold cream) at night and a calamine lotion in the daytime. If no troublesome inflammation is present stimulating ointments at night may be used, *e.g.*, **Sulphur** or **Belladonna** (ext. bellad. 5ij, lano-vaseline or ung. zinc. oxidi q.s., or even the simple extract in special cases) is often of much service, but the eyes must be protected. In the day a **Calamine** or **Creolin** or **Sulphur** (sulphur in eau de Cologne) lotion may be used. When the lesions are removed then carry out the preventive treatment.

Constitutional treatment of acne is neither necessary nor useful, though any disturbance of health from which the patient simultaneously suffers may be set right.

In the ensuing discussion there was a general agreement with Dr. Mackenzie's views, with some reservations. Dr. Leslie Roberts considered the comedones to be a deposit of unused fat, collected in the ducts as the result of an epithelial secretion of fat beyond what could be consumed by the integument. Dr. Payne, however, considers it a developmental affection, residing, not in sebaceous glands alone, but in rudimentary hairs, such as occurred on the face, the shoulders, chest, and other parts. These imperfect hair follicles produced numerous abortive hair shafts, and their glands being also imperfect, produced imperfect sebum, which was too thick to be diffused along the hairs, but clogged the follicles. The inflammation of acne was due to micro-organisms. Payne insisted on the influence which diet exercised on the occurrence of acne. Dr. Crocker also held that the quickest and most efficient method of cure was to correct any health

disturbance simultaneously with the local treatment. Dr. Abraham uses **Ichthyol Soap** principally, whilst Dr. Stopford Taylor commends the **Linimentum Saponis** (B.Ph.) because so many drugs could be incorporated in it. Dr. Unna found **Resorcin Sublimate Paste** of great value. Dr. Crocker thoroughly disinfects open pustules, and Stopford Taylor believed the **Weak Ammoniated Mercury Ointment** was unequalled for this.

At the meeting Unna demonstrated a bacillus which he claims to be the "acne bacillus."

Payne obtained success by using the current, not exceeding 3 milliamperes in strength, from a dry Leclanché battery *to remove indurated lesions* left in the cheek after thirteen years of the disease. The needle from the negative pole was inserted deep into the centre of the indurations, and was repeated where the nodules were large.

W. Allan Jamieson in obstinate *indurated acne* opens the abscesses and then applies **Unna's Salicylic** and **Creasote Plaster.**

Kaposi, in a communication upon the connection of dermatoses with internal disorders, referred to Singer's researches in which he demonstrated the appearance and disappearance of acne in connection with certain processes in the intestine. Kaposi pointed out that whatever value there was in these observations, acne was certainly a disease connected with puberty, and the activity of the hair growths and its attendant glands. To account for the inflammation it is not necessary to call in pyogenic agents, for a pure mechanical action can provoke suppuration. A lowered nutrition of the tissues, involving the hair follicles and their glands, strongly predisposes to acne.

REFERENCES.—Discussion on Acne, Bristol Meeting, Brit. Med. Assoc., 1894; Payne, "Brit. Journ. Derm.," May, 1894; Jamieson, "Brit. Journ. Derm.," Jan. 1894; Kaposi "Wien. Medizin. Press," p. 362, 1894.

Synopsis.—(Vol. 1894, p. 58.) In mild cases Renault dabs the face lightly night and morning with water as hot as can be borne, applied on a sponge previously kept in 1 % **Sublimate Solution.** In moderate cases **Sulphur Ointments** (1 to 10) at night, or painting with **Salicylic Acid** 10 parts, or **Iodoform** 4 parts in 30 of Ether. For comedones, pustules and much induration, he rubs the face with **Black Potash Soap** for several nights, leaving the lather till morning, then washing with warm water and dusting with starch. Having obtained sufficient irritation, emollient sprays or lotions are substituted, *e.g.* **Bran** or **Starch** or **Mallow-water**, with one third of 20 % **Boric Acid** solution. Dry and dust with starch. After alternating these methods for five or six weeks, treat any remaining redness with: R Sulphur Præcip. Glycerine (mixed in water), Alcohol Camphorat., Aq. Rosæ, āā partes æquales (Besnier). **Linear Scarification**, or fine **Thermo-cautery**, for any indurated nodules remaining. Duhring advises

frequent alternation of remedies. **Sulphur** is the most general remedy. He uses: ℞ Sulphur Præcip. ʒjss; Ac. Borici ʒss; Ætheris ʒj; Aq. Cologn. ʒss; Alchohol q.s. ad ʒvj, M. *Sig.*—Apply the sediment as a wash twice daily. For sluggish lesions **Vlemminck's Solution** diluted with 1 to 3 parts of water and applied for ten or twenty minutes daily is often useful. Schwimmer converts disseminated acne into diffuse inflammation by applying: ℞ Sulphur Sublim., Starch, āā ʒijss; Green Soap, ʒv; Lard ʒij. Apply lightly for one or two hours in the evening, then bathe with warm water and dust with a powder. When desquamation sets in, the papules disappear and **Ichthyol** in solution is applied two or three times daily, and as ointment at night. Stelwagon removes comedones and applies **Sulphur Lotions** or saturated solution (alcoholic) of **Boric Acid** or aqueous solution of boric acid with 5 to 20 grs. **Zinc Sulphate** to the oz., or aqueous solution of **Resorcin** 5 to 40 grs. to oz. **Sulphur** and **Ichthyol** are better than mercurials. Leslie Phillips brushes localised chronic acne with **Lysol**, dabbing it off with blotting paper and painting the area with a thin layer of **Kristaline**. Saalfeld speaks well of the action of **Losophan** (p, 22).

ACTINOMYCOSIS.

As actinomycosis is not such a very rare complaint in man, anything relating to its successful treatment in animals is of interest to practitioners. On this point Prof. Oestertag, writing in a recent number of the "Monatshft. f. prakt. Thierkeilkde," calls attention to the value of the **Iodine Therapy** of actinomycosis in veterinary practice, which was first introduced by Thomassen in 1885. Cutaneous and sub-cutaneous tumours are first cross-cut, and then treated with **Tincture of Iodine**: at the same time **Potassium Iodide** (75 grs. twice a day for cows) is exhibited internally. By these means the animals are cured in from two to four weeks. Other veterinary experts (Bass, Fürthmayer, de Jong) fully endorse Oestertag's views.

REFERENCE.—"Prov. Med. Journ.," March 2, 1894.

Synopsis.—(Vol. 1893, p. 60.) Meunier and Thomassen agree in regarding **Iodide of Potassium** as a specific. Ziegler successfully treated a case with injections of **Proteine**. Prof. von Mosetig Moorhof uses **Teucrin**, injecting 3 ccm. of the fluid extract deep into subcutaneous tissues in the vicinity of the disease, using antiseptic precautions (p. 42).

ALBUMINURIA. *Waldron B. Vanderpoel, M.D., New York.*

The presence or absence of albumin from the urine does not convey to the professional mind the diagnostic import it formerly possessed. For a long time it was considered sufficient to discover any proteid matter in the urine to pronounce the case of renal origin, probably a nephritis, and the worst prognosis was accordingly deduced. Now, however, it is well known that several other proteid bodies besides albumin may exist in the urine, each bearing its own significance, and the presence of many, or all, may depend on causes widely remote from

the kidneys, and possess slight, if any, prognostic value. Some observers, notably Posner[1] and Senator,[2] even claim that albumin exists at times in the urine of every healthy person, and that we should recognize a physiological albuminuria as we do a glycosuria, oxaluria, or indicanuria of like nature. On the other hand, clinical records abound of advanced cases of undeniable renal disease where albumin has been entirely absent from the urine constantly, or intermittent in its appearance, and then scanty. This occurs notably in the cirrhotic, or small contracted kidney, accompanied by the widely manifested lesions of cardio-arterio-capillary fibrosis, and in an obscure form, noted by Prof. D. D. Stewart,[3] the pathology of which remains as yet undetermined from failure to obtain autopsy before secondary changes have supervened.

In the large majority of cases albumin does undoubtedly accompany, and its detection affords good ground for suspecting organic renal lesion, but modern methods of examination, and the exacting analyses of examiners for life insurance, have revealed a class of considerable magnitude in which, as just mentioned, no such significance attaches as to existing conditions, whatever the ultimate prognostic import may be. Hence we may accept the view ratified by the consensus of medical opinion on the clinical significance of albuminuria that it depends largely upon the collateral urinary conditions, viz., the presence or absence of casts, the specific gravity of the urine, the daily quantity, the amount of urea, and, as regards the albumin, its persistence, and, in some cases, the amount.

Historically, we owe our first clear idea of the clinical importance of albuminuria to Dr. Richard Bright, of England, as described in his "Reports of Medical Cases," 1827 and 1831, and the subsequent labours of Christison, Rayer, Frerichs, Traube, Sirs George Johnson, William Roberts, T. Grainger Stewart, Profs. Fraser, Saundby, Tyson, Pye-Smith, Goodhart, Gairdner, Ralfe, Senator, Von Jaksch, Posner, Virchow, Capitan, Chateaubourg, Charcot, Semmola, Millard, Da Costa, Hare, with many others equally renowned, have brought our knowledge of renal disease to its present standard.

From what has already been stated, it is apparent that a study of albuminuria to be in any way complete must recognize two distinct and primary forms, which differ widely in their immediate prognosis, but possess many points in common in their etiology and possibly in their morbid characteristics.

Class I.—Here are embraced all cases depending on manifest structural lesions of the renal bodies.

Class II.—A functional or temporary form in which no local renal

lesions have been demonstrated, or, if they have, were only of minor degree or secondary results.

Class I.—The Organic or Structural Form.—To this class was originally limited the clinical significance of albuminuria, now largely transferred to the second class. Here we find naturally grouped (*a*,) All those forms of renal disease commonly called Bright's disease, viz., acute or chronic congestion, parenchymatous, or diffuse nephritis; (*b*,) Amyloid degeneration; (*c*,) Pyelo-nephritis, malignant, tubercular, or syphilitic renal disease.

The general history and associated urinary conditions, gross and microscopic, in the two last groups will render a diagnosis comparatively easy, so we are practically brought to considering this form of albuminuria to be represented by Bright's disease. A study of this would involve traversing a field of late years thoroughly explored, and the results clearly tabulated in our standard text-books; hence little profit could accrue therefrom further than a brief survey of the pathology and etiology would place us in a stronger position to form a clear conception of the general subject of albuminuria, and possibly aid towards the discovery of the factors responsible for the more obscure non-organic form.

The albuminuria of the organic form may be traced to four possible pathological factors which singly or combined, in part or all, may be actively responsible. These are: (1,) Hæmic[4]; (2,) Vascular[5]; (3,) Circulatory[6]; and (4,) Intrinsic[7] or parenchymatous changes.

(1.) *The hæmic changes are :—*

(*a*,) Increase of the albuminoids, from: (1,) Excessive absorption from the alimentary tract due to unusual albuminous ingestion; (2,) Direct absorption from the body tissues from pathological exudations, as in pleurisy, pneumonia, etc.; (3,) Direct hæmic production under the influence of a special ferment on the albumin of the serum or that of the corpuscles; (4,) Excessive corpuscular disintegration under the influence of excessive hepatic activity due to unusual stimulus from unwonted nitrogenous food ingestion, with a corresponding liberation of excess of albumin previously incorporated in the structure of these blood elements. This is in accordance with the theory evolved by the labours of Drs. Ralfe,[8] Noël-Paton,[9] and Thomas Oliver,[10] which assigns the normal origin of urea to this source under hepatic action.

(*b*,) Increased diffusibility of the albuminoids naturally in the blood, and hence their more ready appearance in the urine.

(*c*,) Hydræmia[11] and the opposite condition, diminished fluidity.

(*d*,) Increase[12] of the salts of the blood or the reverse, or urea in any large amount

(*e*,) Toxic substances: There may be an unusual quantity of those naturally thrown into the blood for excretion, or new and totally foreign ones. The first variety are represented by uric acid, lime oxalate, ptomaines, leucine, tyrosine xanthine, hypoxanthine, guanine, creatine, creatinine, etc., all due to diseased or disturbed gastric or intestinal functioning. Under the second class fall a number of drugs, as cantharides, mercury, phosphorus, lead, zinc, alcohol, carbolic acid, atropine, etc.

(2,) *Vascular changes :—*

These may be: (*a*,) Fibroid induration; (*b*,) Waxy or amyloid degeneration; (*c*,) Atrophic changes. The first and last classes mainly interest us here, the second class only figuring with the waxy kidney. The cardiac changes are similar to the vascular ones with a prominence of hypertrophy of the muscular elements, and later atrophy with failure in power.

The causes of these cardiac and vascular changes are: (1,) Altered blood states, changes in density or nutritive power, following prolonged fevers, severe hæmorrhages, as cholera, anæmia, purpura, scorbutus, typhoid and malarial fevers, syphilis, cancer, etc.; (2,) Toxic substances in the blood, the same list as already given; (3,) Disturbed nervous control; (4,) Obstructed circulation.

(3), *Circulatory Changes :—*

These affect the rapidity of the blood current, its volume, and the intravascular tension. In general diminished rapidity and increased tension most favour albuminous exudation, although marked lowering of intra-vascular pressure seems to have some bearing, and is given the prominence by some, notably Prof. Runeberg.

(4,) *Intrinsic or Parenchymatous Changes :—*

These involve the epithelium of the renal glomeruli and tubules straight and convoluted, and are of the usual granular or fatty character peculiar to parenchymatous changes generally. The behaviour of these epithelia towards the albumin submitted by the blood current has been much speculated about, but little determined beyond the fact that it is due to their exercising their proper function that albumin is not a more frequent ingredient of the urine, and that when their influence is impaired or suspended, as was done experimentally by Dr. M'Gregor Robertson[13] with atropine, albumin does so appear. In general it may be noted that the degree of albuminuria is rarely high from any of the extrinsic changes, already described, until by their continuance the nutritive supply to the renal epithelium becomes impaired. The change in these bodies may be so slight as to escape detection even by the highest powers of the microscope, and hence be roughly classed

as functional, yet it suffices to render them pervious, for the time at least, to the albumin of the blood, or, as held by Dr. W. H. Porter,[14] of New York, the possible agents in the development of an isomer to serum-albumin, to which they are pervious.

Finally, mention must be made of a normal source of a minute amount of albumin in the urine from the constant and natural disintegration of these renal cells forming a part of the general process of cellular decay and reconstruction perpetually going on in the animal body. This adventitious albumin is usually too small in amount to be detectable by the customary tests, but in renal congestions and inflammations this process may become augmented so that the amount of extrinsic albumin may influence the simplest tests and be mistaken for an intrinsic or true albuminuria, or so swell the proportions of an intrinsic condition, previously existent, as to lead to false conceptions of the true morbid state present. Other sources of confusion may arise from the admixture with the urine after its secretion of a number of albumins from the presence or disintegration of blood, pus, prostatic, or seminal fluid, leucorrhœa, gleet, etc.

In the same connection it is appropriate to mention what we understand by the name albumin. The forms most commonly found in the urine, and always regarded as of pathological interest, are serum-albumin and serum-globulin or para-globulin. These occur in varying proportions in all albuminous urines, the latter being frequently the most abundant and exceptionally exists alone, and by response to the usual tests for serum-albumin may lead to misapprehension of the true nature of the case, and in a known instance led to the unjust rejection of an application for life insurance. Other kinds of albumin are at times found, derived, for the most part, from extrinsic sources, and possessing more often a general than a special renal import. These are classified by Sir T. Grainger Stewart[15] as follows: Hæmo-globin, peptone, propeptone, albumoses or globuloses, acid albumin or syntonin, alkali-albumin, fibrin, lardacein, and finally mucin, or as some later investigators claim nucleo-albumin.

In the functional form of albuminuria the same changes are operative as in the organic, that is, the extrinsic ones, and possibly in a certain degree the intrinsic ones also, the difference between the two conditions being simply one of degree. For example, we have seen that certain hæmic changes may be provocative of an albuminuria which may never advance to any degenerative or inflammatory renal changes, but always remain extrinsic and functional, or again by its persistency, aided, perhaps, by certain constitutional or external influences, some of the other lesions, vascular, circulatory, or intrinsic

may be developed and a true organic case eventuate. The same order of events may be traced if the morbid chain be picked up in the respective links which represent either the vascular or circulatory change, but with a progressively increasing probability of structural renal disease eventuating as we advance. In other words, if the condition causing the albuminuria be not too persistent, and especially if it remain uncomplicated, no more serious consequence need be feared than an intermittent, cyclic, or functional form, but if these two provisos fail us or influences constitutional or external prove unfavourable a true nephritis is inevitable.

Etiology.—The same causes, local or constitutional, may, with very few exceptions, lead to either the structural or functional form of albuminuria. The greater or lesser intensity of the local expression of the morbid process, its duration, the personal susceptibility of the subject and the surroundings largely determine which type is to follow.

Predisposing and exciting causes are found :—

(1,) *Predisposing causes :—*

These embrace (*a*,) Climate, (*b*,) Sex, (*c*,) Age, (*d*,) Heredity, (*e*,) Habits, (*f*,) General constitutional condition.

(2,) *Exciting causes :—*

We have here (*a*,) Constitutional, (*b*,) Local, and (*c*,) Obstructive.

(*a*,) *Constitutional :—*

(1,) Acute febrile and inflammatory affections, scarlet fever, measles, varicella, diphtheria, typhus and typhoid fevers, cholera, yellow fever, malaria, pneumonia, peritonitis, traumatic fever, acute articular rheumatism, gout, syphilis, erysipelas, mumps, pertussis, etc.

(2,) Chronic affections, tuberculosis, pulmonary or otherwise, cancer, caries or necrosis, anæmia, debility, dyspepsia, scurvy, pyæmia, purpura, chronic hepatic or renal congestion from cardiac disease, and certain skin diseases.

(3,) The pregnant, puerperal, uric acid, or oxaluric state.

(4,) Nervous disorders, delirium tremens, chorea, epilepsy, apoplexy, exophthalmic goitre, hysteria, influenza, and Stewart reports a case accompanying infantile paralysis, and also one with multiple sclerosis, and again with the general paralysis of the insane.

(*b*,) *Local :—*

Certain poisons are found to be operative here : Cantharides, manganese, oxalic acid, cobalt, arsenic, nickel, mercury, zinc, lead, iodine, sulphuric acid, turpentine, hydrochloric acid, santonine, carbolic acid (creasote), juniper, salicylic acid, ammonium, alcohol, iodoform, etc.

(*c*,) *Obstructive :—*

Under this term is intended to be embraced all causes interfering

with the venous blood return from the kidneys. In males this may follow urethral stricture, enlarged prostate, tumours, or inflammations of the bladder, calculi, etc.; in females pregnancy, tumours or displacements of the uterus[16] or ovaries, pelvic inflammations, bladder diseases, etc., and in either sex twists or intussusceptions of the ureters[17] or a calculus there lodged.

Class II.—The Functional or Non-organic Form of Albuminuria.—The characteristics of this class have been already brought out, as well as its etiology; and the pathology, if any, may be considered to exist. Many observers of world-wide repute totally reject this form and claim for it a distinct pathological basis in the renal or intimately associated parts. Millard, Jackson, Jasiewicz, Wood, of Harvard, Winternitz, Plosz, A. H. Smith, W. H. Porter, are some of the well-known names of many nationalities prominently linked with this view. We can bring under a threefold heading all the clinical varieties of this form of albuminuria reported by different writers: viz., (1,) Simple albuminuria, (2,) Uric acid or oxaluric form, (3,) Neurotic type.

(1,) *Simple albuminuria*[18].— Here would fall all cases presenting no preceding or accompanying symptoms indicating morbid disturbance of the digestive, circulatory or nervous functions, giving no indication from urinalysis of organic renal lesion and in which the existence of the albuminuria is only revealed accidentally through examination by the family physician, or more often by the examiner for life insurance. These are the true functional, physiological or chronic albuminurias. The discoverable causes are, (1,) Dietetic, (2,) Exposure to cold or cold bathing, (3,) Muscular activity. (4,) Mental strain or worry, prolonged brain activity, (5,) Adolescence.

(1,) Dietetic.—(*a*,) The mere ingestion of food suffices in those predisposed;[19] (*b*,) An idiosyncrasy exists in some towards certain food articles,[20] as eggs, cheese, buckwheat cakes, pastry, meats, etc. (2,) Exposure to cold, etc.—The influence of these agencies has been clearly proved by the observations of Sirs G. Stewart and George Johnson.[21] (3,) Muscular activity.[22]—To this class belong all states, conditions or pursuits which involve any tax on the physical powers, as football playing, soldiers on the march, pedestrianism, blowing of wind instruments, parturition, and exceptionally the erect posture. (4,) Mental strain, etc., particularly observable in business and professional men. (5,) Adolescence.[23]—This period of vital activity seems to be attended by an unstable functional state of all the organs of the body, manifested in the kidneys by trivial causes being provocative of albuminuria.

The following changes dependent on the above influences are considered immediately responsible for the result: (1,) All the hæmic changes detailed under structural form; (2,) Possible transudation of albumin due to altered calibre of the vessels or rapidity of blood current depending on reflex nervous influences; (3,) An actual glomerulo-nephritis.

(2,) *The Uric Acid or Oxaluric form.*[24]—The daily quota of urine remains normal but the amount of solids is materially increased, furnishing a concentrated urine—sp. gr. 1022-28-36. Chlorides normal or increased, never diminished, phosphates and urea normal or increased, casts hyaline or epithelial. Albumin usually small in amount, most abundant early in the day, possibly absent later. Two factors mainly responsible: (1,) Excess in an insufficiently mixed diet; (2,) An inherited or acquired sensitive condition of the liver and kidneys, called the uric acid or lithæmic diathesis, which renders them prone to functional disturbance. The immediate causes of the disturbance of the renal function are: (1,) Mechanical irritation from the sharp crystals of uric acid or lime oxalate. These if lodged may produce persistent albuminuria; (2,) Altered blood pressure in the renal vessels from reflex influences due to irritation of the terminal filaments of the pneumo-gastric; (3,) Chemical blood changes. Frequently no constitutional symptoms prevail, but commonly a dyspeptic history is given with pronounced nervous and circulatory disturbances, sometimes a rigid high tension pulse warning of impending organic renal changes.

(3,) *Neurotic type*[25].—The diseases operative here have been already enumerated. The influence of the cerebro spinal system over renal functions is shown by the experimental evidence that puncture of the floor of the fourth ventricle near the glycosuric centre, lesion of the cerebral peduncles and section or irritation of the spinal cord will produce albuminuria The renal circulation is so modified as to cause albuminuria by direct nervous influences conveyed from the brain or cord through the splanchnic, cœliac, and renal nerve plexuses. Under this class will probably fall albuminurias, attending (1,) Extremes of temperature[26], (2,) In the newly born, (3,) After anæsthesia.

The prominent clinical features of these functional albuminurias are worthy of careful scrutiny, as a diagnosis can often be reached from the organic form by exclusion only:—

(1,) *Pulse rate and tension.*—The rate is usually normal, tension feeble. If both are constantly increased we may justly anticipate a commencing cardiac hypertrophy and arterio-sclerosis.

(2,) *Albumin.*—The amount and persistency are of little moment. The microscope and clinical history will usually determine the kind of albumin present. Mucin (nucleo-albumin) offers the most fruitful source of error, "present in all urines, healthy or morbid" (Sir Wm. Roberts),[27] "of the same diagnostic import as albumin if persistent or in large amount" (W. H. Washburn).

(3,) *Urea.*—This is an exponent of the working capacity of the kidneys, influenced by the quantity of fluid consumed, kind of food, exercise and digestive state. It should be of normal amount here.

(4,) *Casts.*[28]— These bodies, derived from albuminous or fibrinous exudates from the blood, or, as now held, from perverted cellular changes in the epithelium of the renal tubules, are found with most renal congestions and inflammations, but why at times present and again absent under the same apparent physical conditions we cannot say. Usually of grave import, yet recovery is possible, and Charcot[29] states that hyaline ones may exist in normal urine.

(5,) *Specific Gravity.*—If high, we may safely assume the kidneys are functioning properly, particularly if the daily quantity is normal.

(6,) *Daily Quantity.*—This represents the filtration activity of the kidneys. It should be normal here, influenced solely by the usual causes, viz., atmospheric temperature and moisture, and the diet.

(7,) *Colour.*—Varies from pale to dark or even black. This should depend on the concentration and so be of importance in determining what the daily quantity should be; but it may be influenced by articles of diet, certain drugs, or abnormal products from the patient's own economy.

(8,) *Phosphates, Urates, Chlorides and Oxalates.*—These have been already considered, or are of no immediate importance.

(9,) *General appearance.*—We may notice frequently a peculiar pallor, some disinclination to exercise, poor circulation, transient œdemas of feet or eyelids, the same as in the organic form but less intense.

PROGNOSIS.[30]— My personal feelings towards these cases are distrustful, and I relax these feelings only when the albumin has been absent for weeks or months consecutively and the urine becomes entirely normal in other respects. Undoubtedly cases may persist for years and never appear to go further towards organic disease; but the natural tendency is not so benign, and I would pronounce these cases as suspicious and worthy of careful supervision and demanding a guarded prognosis.

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Synopsis.—(Vol. 1894. p. 63.) Paul, Dujardin-Beaumetz, and Germain Sée, have brought forward **Strontium** and **Calcium**. They may be prescribed as follows: Strontium Lactate 4 grms. per day; Strontium Bromide 4 grms. per day; Calcium Bromide 4 grms. per day; Chlorbromide, 4 grms.

ALCOHOLISM. *Allan McLane Hamilton, M.D., New York.*

Clark[1] treats the catarrhal gastritis of alcoholism with hot **Wiesbaden Kochbrunnen Water.**

Bellamy,[2] of Colorado Springs, recognizes the following treat

ment for delirium tremens: A primary **Calomel Purge** and 20 grains of **Trional** mixed in water, with 10 minims of **Tincture of Capsicum** to hasten absorption, and at the same time a **Hot Bath** if the patient's condition will warrant it. If restraint is indicated it is to be applied, and if there is no abatement in the delirium 10 grains of trional are to be given in thirty minutes. If quiet is not obtained in an hour 20 grains more are added. In nearly every instance of the reported cases sleep followed the administration of 50 grains. Where the heart was weak **Digitalis** was administered, and for the treatment of convalescence mixtures of the vegetable bitters, **Strychnine** and **Valerian** were prescribed. In all cases forced feeding, in small quantities often repeated, was followed.

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[*Editorial.*

Regarding the use of **Strychnine Nitrate**[1] in alcoholism experience shows that simultaneously with the use of this remedy, the craving for alcohol in inebriates diminishes and in a few days is completely gone, and through the withdrawal of the poisonous beverages and the tonic effects of the strychnine there is a more or less rapid restoration to sound physical health and of the mental powers. But as most of those treated have relapsed within from one to eleven months, the inhibiting power of the remedy is not permanent, and while it temporarily relieves the distressing and overwhelming craving for more stimulant and promotes a return to normal health, in which condition the patients may continue to remain, yet they still lack the necessary will-power to enable them to avoid the dangers which they know will precipitate a return to their previous enslaved and degraded condition. So that, while it is fully within the power of medical science to restore these patients to temporary health, strychnine does not—as doubtless no drug treatment ever will—prevent the possibility of further relapses, although we can always depend on it to arrest what would be a prolonged debauch if its aid is early resorted to.

Dr. Twitchell[2] aims at assigning to delirium tremens its true importance as a disease. As to ætiology he says that the disease often begins one, two, or three days after the individual has ceased drinking. No single drinking-bout ever produced delirium tremens. The chronic drinker may develop it without ever having been drunk. Usually there is an exciting cause apart from alcoholism —such as inclement weather, an accident, or an attack of pneu-

monia or other acute disease. He divides its clinical history into three stages—the incipient stage, the violent stage and the typhoid stage. In the incipient stage the sufferer fully appreciates the character of the disease that is approaching. He has the "horrors." The violent stage begins with the true delirium; sometimes it is ushered in with a violent epileptoid convulsion, hallucinations crowd upon the mind, the tremor is very pronounced. The great excitement rarely lasts longer than three or four days, but at the end of this period the exhaustion does not always lead to natural sleep; it often leads to a peculiar typhoid state. After the violent stage is well developed the prognosis becomes grave. Death may take place in a couple of days. Pneumonic and surgical cases usually die in this stage, so also do the febrile cases of Magnan. In the typhoid stage the delirium becomes quiet. The condition may last six or eight weeks, or even longer. A small proportion of cases recover even at this stage of the disease; the great majority die. This sequel to the violent stage of delirium tremens is by no means rare. In the diagnosis the conditions to be excluded are: acute alcoholic intoxication, psychoses made prominent by drink, alcoholic insanity, delirium of infectious diseases, and mania. In his remarks on the pathology Dr. Twitchell says: "Whatever finally proves to be the true explanation of the phenomena of this disease, I believe it will be found that delirium tremens does not, and cannot, occur in subjects with healthy kidneys." In his treatment he says it is wise to begin with a purgative. He suggests that **Hot-air Baths** would be of great value in the typhoid stage. He recommends **Capsicum** or some similar drug to aid in overcoming the nervousness that seems associated with the disturbed stomach. He states that at the City Hospital good results were obtained from **Chloral Hydrate** in 30, 45, or 60 grains every half-hour to three-quarters of an hour, until the patient was asleep. Shackles are a necessary evil; in the latter stage it is bad practice to use them. **Strychnine** is a most valuable drug in the typhoid stage. He says the greatest difficulty in treating delirium tremens is to persuade the attendants that the patients are really human beings suffering from a disease.

Dr. D. W. Cheever,[3] recommends in the incipient stage of delirium tremens the employment of simple remedies, such as **Coca, Camphor** or **Asafœtida.** Coca wine is extremely useful in counteracting the excitability produced in slight cases of delirium tremens. Camphor likewise is very grateful and very soothing to

the patient. Asafœtida is a much disused but nevertheless an extremely valuable agent. It should be given largely to be of any effect—10, 20, or 30 grains; and its advantage is that it is quieting, and disposes to sleep. It is also to a very marked degree stimulating, and it is also somewhat relaxing to the bowels. These three qualities render it extremely valuable in slight nervous affections resulting from incipient delirium tremens. Occasionally a certain effect may be got from counter-irritation applied over the pit of the stomach, which sometimes affords great relief in this nervous state.

REFERENCES.—[1] "Therap. Gazette," March 15, 1894.; [2] "Practitioner," March, 1894; [3] Ibid., Dec. 1893.

Synopsis.—(Vol. 1894, p. 66.) Mann prescribes: ℞ Quinia Sulph. gr. 2; Zinc Oxide gr. 2; Strych. Sulph. gr. $\frac{1}{4\,0}$; Arsenic gr. $\frac{1}{1\,0\,0}$; Capsicum gr. 2. M. Ft. pil. j. *Sig.*—j pill three times a day. At the same time he uses hypodermically: ℞ Strych. Nitrat. gr. j. Aquæ dest. ℥ss. M. *Sig.*—8 ♏ daily for eight days; 4 ♏ daily for another eight days. For morning nausea 2 or 3 drops of **Ipecacuanha Wine** on the tongue, fasting. For the first few days rest in bed with diet of **Milk** and **Meat Juice**. **Hydrotherapy** and **Electrotherapy** are employed. To induce sleep: ℞ Tr. Opii deod., Fl. Ext. Hyoscy., Chloral Hydrat., Pot. Brom. āā ℥j; Tr. Capsici ℥ss, Tr. Aconit. Rad. ♏ v.; Aq. Menth. Pip. ad ℥iv, M. *Sig.*—2 tablespoonfuls at bed time for a few days only, freely diluted with water. If delirium tremens threaten, give for two or three nights: ℞ Hyoscin. Hydrobrom. gr. j, Aq. dest. ℥ix, Sp. Vin. Rect. ℥j, M. et ft. hypodermatic solution. *Sig.*—Dose from 5 to 10 ♏ p. r. n. Steell considers **Digitalis** the one remedy for alcoholic heart failure. For dipsomania in general: ℞ Tr. Capsici ♏ 10, Sod. Brom. gr. 10, Sp. Ammon. Aromatic. ℥j. M. To be taken in a little water three times a day.

ALOPECIA AREATA.

T. Colcott Fox, M.B.

Ferras[1] treats both by local and internal remedies. He gives baths of strong **Sulphur Water** lasting thirty to forty minutes and followed by **Massage** for ten to twenty minutes, and **Hot Spray** lasting for three to five minutes. Also a half pint of sulphur water is taken morning and evening. Locally, he applies tincture of iodi and hot sulphur-water sprays.

Allan Jamieson recommends **Kneading of the Scalp** backwards and forwards several times daily as an adjuvant to medicinal means of treatment in the early stage of A. prematura.

Leistikow[2] prepares a stick composed of chrysarobin 30, colophonium 5, cera flava 35, olive oil 30 parts, and with this rubs the affected parts every evening. The part is washed clean with olive oil every morning, and any undue irritation is calmed by zinc ointment. He regards **Chrysarobin** as the best remedy.

REFERENCES.—[1] "Ann. de Derm. et de Syph.," t. iv., No. 10;

"Therap. Gazette," Jan. 1894; [2] "Monatsch. f. prakt. Derm.," Jan. 1894.

Synopsis.—(Vol. 1894, p. 68.) The value of arsenic is doubtful. White prefers a mixture of ℥j Croton Oil in Hss—Hj of Oil of Turpentine. He found the French essence of cinnamon less effective. Fox and Morrow find carbolic acid unsatisfactory; the latter physician tried pyrozone with little result. Piffard prefers ordinary blistering collodion, but has found Carbolic Acid, 10% solution of Iodine in Collodion and a caustic solution of Hydrogen Peroxide successful. Morison advocates blistering edges of patch with Hydrarg. Perchlor. gr. 5, Salicylic Acid ℥j, Collodion ℥j, and then applying Salicylate of Mercury in Lanolin. Jackson speaks well of the stronger water of Ammonia. Duhring likes Carbolic Acid ℥j, Alcohol ℥vij, and in obstinate cases blistering with carbolic acid. Chrysarobin is better. Epilation of the margin of a spreading patch is generally thought well of. Hallopeau uses Oil of Wintergreen 1 part, Ether 3 parts. Oil of Cinnamon is in good repute. Butte finds Iodised Collodion effective where patches are few and sharply circumscribed, but taking alopecia all round he finds friction with Oil of Cade better. Ehrmann gets good results from a feeble Faradic Current. Bellasera advises that hair be cut thrice weekly just around the patches, and at night an ointment applied of Naphthol β 12 to 14 grms., Balsam of Peru 1 grm., Vaseline 100 grms., and by day an alcoholic solution of the same. Brocq notes that in the decalvans variety seborrhœa of the scalp is often present and should be treated with Sulphur while dealing with the alopecia. Prentiss commends Pilocarpine as a scalp stimulant, given either in small and long continued doses by the mouth or by the rapid hypodermic method, using 1 cgrm. two or three times a week. Seeger suggests brushing the hair radially several times daily, exercising the occipitofrontalis muscle, application of Frictional Electricity twice daily, stroking nape of neck with a coarse bathing glove to stimulate erectes pilorum. If parasitism is suspected apply once weekly: ℞ Ethereal Oil of Cloves 5 drops, Pure Water of Ammonia and Pure Glycerine of each 80 ♏, Tincture of Sabadilla, ℥j. To be washed off in from fifteen to thirty minutes.

AMENORRHŒA.

Talley[1] and Bloom[2] report gratifying results attending the use of Oxalic Acid as an emmenagogue. The latter administers it as follows:—

℞ Oxalic Acid gr. 8 | Aquæ
| Syr. Limonis āā ℥ij.

M. Sig.—A teaspoonful four times a day.

Talley, however, believes that while an efficient emmenagogue and a capable abortifacient, oxalic acid is not to be regarded as a perfectly safe drug, as he met with a case in which toxic symptoms followed the ingestion of three doses of ½ grain each, repeated at about four-hour intervals.

The action of oxalic acid seems to be that of a direct stimulant to the uterine mucous membrane. It is, therefore, applicable to the treatment of amenorrhœa of the anæmic as well as of the plethoric

type. Upon the pregnant uterus oxalic acid is capable of producing powerful uterine contractions, which terminate in the expulsion of the product of conception. This was observed in two cases of early physiologic amenorrhœa in which oxalic acid had been administered, the diagnosis of pregnancy not having been made.

Talley considers it a valuable drug in the treatment of amenorrhœa, but one that should be given guardedly, carefully watched, and only prescribed when the diagnosis of pregnancy has been excluded.

Panecki[3] has found **Electricity**, and particularly the faradic current, the most successful means of dealing with amenorrhœa. It is necessary that the poles should be introduced into the uterus and be allowed to act there. This treatment is well borne, and the current can be increased at each sitting, the number of the latter required averaging from five to thirty, and their duration five to fifteen minutes during successive days.

For amenorrhœa[4]:—

℞ Hydrargyri Perchloridi	gr. ¾	Potassii Carbonatis	gr. xv
Sodii Arseniatis	gr. j	Extracti Nucis Vomicæ	gr. v
Ferri Sulphatis Exsiccatæ	gr. xxx		

Misce et divide in pilulas xxx. 1 pill to be taken before each meal.

REFERENCES.—[1] "Therap. Gaz.," March, 15, 1894; [2] "Med. News," October 14, 1893; [3] "Therap. Monatsh.," March, 1894; [4] "Pract.," June, 1894.

Synopsis.—(Vol. 1894, p 70.) Carrière finds that **Iron**, combined with **Ergot**, gives better results in young girls than iron alone. Trousseau employed **Honey of Iron** with good effect. In some cases iron (especially the **Tartrate of Iron and Potassium**) acts better if combined with **Emmenagogues**. In chlorotic cases if general treatment and change of climate fail, **Inhalations of Oxygen**, and **Massage** may succeed. **Mugwort**, **Saffron** and **Apiol** are of special value; 3 cupfulls of infusion of mugwort (strength, 5 grms. to one litre of water) may be given in the day. Pelletan finds **Apioline** in doses of 20 cgrms. (given in capsules), a true stimulating emmenagogue in atonic amenorrhœa (p. 11).

ANÆMIA and CHLOROSIS.

Concluding a paper on physical rest in the treatment of chlorotic anæmia, Dr. Taylor[1] says: "What I wish especially to lay stress upon is that the classical treatment by **Iron**, or by iron and purgatives, is not assisted, but much counteracted, by the prescription of exercise. Against fresh air I have nothing to say so long as it does not involve exercise, either by walking or riding. It is, of course, partly a question of proportion: the worse the case the more absolute should be the rest. In a slighter degree of anæmia, or one already recovering, carriage exercise may be allowed, while in the severe forms the patient may be with advantage kept in bed entirely, the most

certain means of keeping a patient absolutely at rest. An intermediate prescription is that the patient shall get up only for three or four hours in the afternoon."

Forcheimer,[2] criticises Kobert's conclusion as to the reduction products of hæmoglobin giving better results than hæmoglobin itself. Either of the two bodies hæmol and hæmogallol (the former a zinc, the latter a pyrogallol derivative of hæmoglobin) gives good results in the treatment of chlorosis, but unless some other reasons than those advanced are given, they cannot be pronounced preferable to hæmoglobin itself. Indeed, in the method of treatment to be discussed, beef-juice, blood itself, or blood conserves do just as well as anything else. The new preparations are especially available, in that they can be given either in wafers or, as Kobert states, in chocolate tablets, the latter form being especially valuable for children.

Forcheimer's experiments lead him to believe that the anæmia of children, in whom we find such enormous variations in the quantities of hæmoglobin following intestinal troubles, is most effectually removed by arsenic preparations, and that the **Arsenite of Copper** is very valuable in such cases and also in adults, where, as is sometimes the case, the bowels are loose and the intestinal catarrh can be looked to for the cause of hæmoglobin diminution.

The best possible results controlled by blood analyses as to time, quantity, and permanency, are obtained by combining an antiseptic with a blood preparation. Forcheimer gives 5 grains of **Hydronaphthol** or **Salol** before meals, and the same quantity of **Hæmogallol** immediately after the meal. When these preparations cannot be obtained, large quantities of **Beef-juice** can be substituted, or any of the many preparations which contain blood ; precaution must be taken to see that they really do contain blood in case the latter are used.

Second in utility comes the administration of the antiseptic before the meal, and some form of iron after the meal ; **Carbonate of Iron** has given better results than any other preparation Forcheimer has used.

It is difficult to decide as to the relative merits of iron or antiseptics when given separately ; it is certain, however, that the antiseptics will succeed when given alone in many cases in which iron fails completely.

Stockman, [3] in a most interesting paper on "The Treatment of Chlorosis with Iron and some other Drugs," has given **Ferrous Sulphide** in keratin capsules for the purpose of effectually disposing

of Bunge's theory of sulphuretted hydrogen by iron absorption. Only two cases were treated in this manner, but in these the results were so gratifying that they encourage further trial in this direction.

Iron Hypodermically in Chlorosis.—M. Dori,[4] as a result of extensive trials of the hypodermic injection of **Ammonio-citrate of Iron** in cases of chloro-anæmia, finds that this salt gives excellent results. Patients are able to tolerate large quantities without inconvenience, and its therapeutic effects speedily become manifest in an increase of the hæmoglobin contained in the blood, accompanied by marked improvement in the patient's general condition. The daily dose usually employed was about 5 centigrammes, dissolved in 1 gramme of water, and injected into the interscapular region.

In anæmic cases the following may be employed [5]:—

℞ Strychninæ Sulphat.	gr. ½	Syr. Simplicis	℥iss
Tr. Ferri Chlor.	℥ij	Aq. Destill. q.s. ad	℥vj
Vini Ergotæ	℥ss		

M. Sig.—Teaspoonful three times a day.

REFERENCES.—[1] "Practitioner," September, 1893; [2] "Therap. Gazette," Jan. 15, 1894; [3] "Brit. Med. Journ.," 1893; [4] Ibid., Supplement, p. 72, vol. ii., 1893; [5] "Medical Press and Circular," January, 1894.

ANÆMIA PERNICIOSA.

Stengel advises that under no circumstances should **Arsenic** be pushed so far as to produce diarrhœa or other gastro-intestinal symptoms, as the loss of ground from an attack of diarrhœa may more than counterbalance the gain secured by weeks of judicious treatment. The tolerance of the drug is sometimes remarkable, but there is little need of increasing the dose beyond 15 drops, even when it is well borne.

The patient should always at first be confined to bed, and should be required to use the bed-pan and urinal. The diet should be nutritious and easily assimilable. Meats should not be given too freely, on account of the diminished secretion of hydrochloric acid; nor, on the other hand, should sugars or starchy food be allowed in large quantity, from their tendency to fermentation. Symptomatic treatment is generally required to aid digestion and to allay gastric irritation. For the former purpose **Hydrochloric Acid** is often essential, and should always be tried where gastric fulness and fermentation are complained of. Where vomiting is severe small doses of **Bismuth Subnitrate** (5 grains) with **Cocaine** ($\frac{1}{30}$ to $\frac{1}{12}$

grain) act more happily than any other remedies; and it has seemed that arsenic could be administered more freely and continuously with than without these adjuvants. They are best administered some time before the meal.

Lavage may prove of great advantage in controlling obstinate vomiting and in improving the digestive power. In cases where gastric atony seems prominent and the patient's appetite is poor, bitters may be given with advantage before meals.

Intestinal lavage has been less frequently practised, and has not as yet yielded definite results. The use of intestinal antiseptics, such as salol, naphthol, and carbolic acid, has been highly lauded, but the results are thus far uncertain. Free use of purgatives is distinctly less advisable than in chlorosis, excepting in the cases of parasitic pernicious anæmia. Enemata or suppositories will generally be sufficient for the purpose of securing action of the bowels, and beyond this we should not attempt to go.

Sooner or later in pernicious anæmia there comes a time when remedies seem altogether powerless.

At this stage measures directed to assist the circulation are even more essential than arsenic, and of these not the least powerful is systematic **Massage**. A still more advanced case would call for injections of water or of blood. The safest and perhaps the best method would be the hypodermic injection of normal **Salt Solution** in large quantities (2 pints to 2 quarts). The transfusion of blood itself has been practised by a number of investigators, and some, as Brakenridge, report remarkable improvement following the operations. It is doubtful, however, if blood-serum or blood has any great advantage over salt-water, and certainly the danger of fibrin-ferment intoxication and other accidents would militate against their use.

During convalescence **Iron** is a valuable adjunct to arsenic. In the earlier stages of the disease, however, it is not only of no value, but often disagrees decidedly.

REFERENCE.—"Therap. Gazette," June, 1894.

Synopsis.—(Vol. 1894, p. 72.) Smart places the chief **Iron Preparations** in the following order of value: (1,) Sulphate, (2,) Carbonate (saccharine); (3,) Protochloride; (4,) Phosphate; (5,) Protoxide. In cases combined with atonic dyspepsia, the **Sulphate** shortly after meals and **Ac. Hydrochlor. Dil.**, ♏ 15 to 25, just before meals. For acid dyspepsia, **Soda Bicarb.** and **Potass. Carb.**, āā gr. 10, instead of the acid. **Carbonate of Iron**, gr. 20 to 30 t. d. during or after meals is useful. **Protochloride** in very small doses at first to avoid nausea. **Phosphate** is best apparently in neurotic cases. **Arsenic** combined with **Iron** is better than alone, except in pernicious anæmia. **Transfusion of Healthy**

Blood is gaining favour in pernicious anæmia, and where there is splenic enlargement **Nitrate of Iron** and **Quinine** are given in full doses. Rieder uses **Blaud's Pills** and **Albuminate of Iron** in pure chlorosis. If no digestive catarrh exists, Schultz gives **Flowers of Sulphur** with **Sugar of Milk** as much as will cover the point of a penknife thrice daily. Traugott advocates **Hot Air Baths** in chloro-anæmia. In pernicious form, Gibson gives Beta-Naphthol 2 grains t. d. post cib. with **Bismuth Salicylate** gr. 1. **Chalybeate Lemonade**: R Tr. Ferr. Perchl. ʒiv; Ac. Phosph. Dil. ʒiv; Tr. Limon. ʒij; Syr. simp. ad ʒvj. *Sig.*—2 teaspoonfuls in a small tumblerful of water after meals. For anæmia with constipation: R Ext. Nuc. Vom. gr. ¼; Ferr. Sulph. exsicc. gr. j; Aloin gr. ¼; Pulv. Myrrh. gr. ½; Pulv. Ipecac. gr. ½; Ext. Gentianæ gr. ij; M. et ft pil. To be taken each night. Ewald's method of rendering Iron assimilable: R Tr. Ferr. Perchlor. ʒj; Aq. Albuminosæ (*i.e.*, white of egg 1 part, water 5 parts), ʒvj; M. Ft. sol.

ANÆSTHESIA.

From the report of the committee on anæsthesia at the Berlin Surgical Congress[1] it would appear that the dangers of **Chloroform Inhalation** do not lie in any accidental impurity; indeed, the facts seemed to point the other way, and that the danger is directly proportionate to the purity of the chloroform. This consideration has lately led to a different mode of administration. It has been given more slowly, and occasionally **Atropine** and **Cocaine** have been used with it. As regards accidents, two hundred and fifty-five severe cases of asphyxia have occurred, and tracheotomy had to be performed three times. **Ether** has shown itself the least dangerous anæsthetic, ten times less dangerous than chloroform, but it is not without its shady side; it is dangerous in lung affections.

In a "Therapeutic Gazette" editorial the writer[2] expresses his conviction that not only does valvular disease not contra-indicate the use of anæsthetics, but, on the other hand, there is even greater reason for their employment in persons so afflicted than in those who are in ordinary health. The shock of the operation and the struggling from pain are both of them factors which will more seriously affect the heart than will any anæsthetics if cautiously administered, and those who have had the most experience as anæsthetizers are able to recall many instances in which patients with heart disease have taken the anæsthetic quite as well as those who have not had this trouble. Even if valvular disease is associated with well-marked atheromatous changes in the blood-vessels and corresponding cirrhotic processes in the kidney, anæsthetics are probably preferable to no anæsthesia when operations are necessary. While it is true that ether at least, distinctly increases cardiac action and arterial pressure, this increase is rarely sufficient in degree to do any harm. Chloroform is probably, in most of these instances, the safer anæsthetic in

one respect—namely, that it rarely produces the early stages of struggling which are often so characteristic of ether; but, on the other hand, any suspicion of fatty or other degeneration of the heart-muscle should force us to the employment of ether rather than chloroform. Auscultation of the heart will generally give us some indication as to the character of these cases. It will indicate whether the patient has accompanying his valvular lesion marked cardiac dilatation and enfeeblement of the heart-muscle. A therapeutic point to be remembered is that it is not the loudness of the murmur that contra-indicates the employment of an anæsthetic; it is the condition of the heart-muscle which must be taken into consideration. If the apex-beat is almost indistinguishable and the second sound muffled and feeble, if percussion indicates that marked dilatation is present, even if the murmur is heard with difficulty, we believe that the contra-indication to the anæsthetic is very positive—so positive that it should not be administered nor the operation undertaken without the physician impressing upon the patient and his friends that grave danger exists. On the other hand, the evidence of cardiac hypertrophy, as shown in the forcible impulse of the heart against the chest wall and the sharp sounds of the aortic valves will indicate that anæsthetics can be given almost with the safety which is present when healthy men are anæsthetized.

Krogius[3] describes a new method of producing **Cocaine Analgesia**, which is based on the fact that when a solution of this agent is injected into the subcutaneous tissue near to a nerve trunk it causes loss of sensation over a large zone corresponding to the peripheral distribution of this nerve. In order to reach the selected nerve trunk with certainty, and to apply the cocaine to several of its branches at the same time, the author in injecting the subcutaneous tissue, passes his needle across the long axis of the limb, and as the needle is thrust along, the solution is gradually discharged. An injection made in this way across the root of a finger will, in the course of ten minutes, result in analgesia of the whole digit, not of the skin only, but also of the tendons, the periosteum, and all the deep structures. If one or two injections be made transversely near the wrist, a considerable extent of the palm of the hand may be thus rendered analgesic. The sensibility of the ulnar side of the hand as far as the roots of the last two fingers may, it is stated, be abolished by injecting a solution of cocaine over the ulnar nerve at the back of the elbow. By injecting over both supraorbital notches, analgesia may be produced in the whole of the middle portion of the forehead. The analgesia caused by this method of using cocaine attains its greatest intensity and extent from five to

ten minutes after the injection, and is maintained for a quarter of an hour or even longer. The author injects only a weak (2 per cent.) solution of cocaine, and keeps the patient recumbent for at least a quarter of an hour after the operation. This method has been practised with success at Helsingfors in two hundred minor operations, such as amputation of the fingers and toes, excision of palmar fascia, and phimosis.

REFERENCES. —[1] "Therap. Gaz.," August 15, 1894; [2] "Therap. Gaz.," March 15, 1894; [3] "Brit. Med. Journ."

Synopsis.—(Vol. 1894, p. 75.) Subsequent nausea said to be promptly relieved by a mixture of Creasote, 4 drops in 2 ounces of Lime-water.

ANCHYLOSTOMIASIS. *F. M. Sandwith, M.D., Cairo.*

*Anchylostomiasis in four hundred Egyptian patients.**—All that is required to produce anchylostomiasis in man or monkey is to introduce into the stomach a microscopical quantity of earth containing embryos of the parasite in its rhabdite form, and then to patiently await the result. Muddy water, such as the Egyptians prefer to drink, will act as a vehicle if the embryos have not been too long in it. Unwashed vegetables, fouled by human ordure, and especially unwashed hands, coming straight from tilling contaminated soil, are probably responsible for much of the infection. The calls of nature are obeyed by both sexes in close proximity to the huts in or outside which they eat, and doubtless embryos are often transferred from the feet to the mouth of those who sit cross-legged at their meals.

European text-books still refer to water as the medium through which the parasite reaches man. But Surgeon Major Giles has examined fifty-six specimens of water from wells and ponds of villages in Assam affected by anchylostomiasis, and sixteen of these he found by chemical and microscopical examination to be "bad" or "very bad." Yet on only one occasion did he find a rhabdite of doubtful origin in water. However, it is quite possible that Egyptians may occasionally infect themselves by their habit of rinsing their mouths with stirred-up muddy water.

Fortunately, continued exposure to the sun's heat during dry weather kills the embryos, or it would be possible for the parasite to do much more harm than is now done in Egypt. But the fellaheen, who seem unconsciously to devote their lives to encouraging their entozoa, are often eaters of earth, like the anæmic negroes of the West Indies and Guiana; 26 per cent. of the cases confessed to eating it, though most of them allowed that it was a bad habit and in-

*A longer paper by the author on this subject was read before the International Medical Congress at Rome.

duced anæmia. They call the Nile mud "teen Ibliz" (πηλὸς, mud), and apparently have some old superstition that the soil, so fertile to vegetation, cannot but be beneficial to the human economy.

Definition.—I venture to propose the following as the definition of anchylostomiasis: An insidious wasting disease characterised by progressive anæmia without apparent cause, and by digestive and nervous deterioration, occurring chiefly in earth and brick labourers of warm climates, caused by the presence in the duodenum and jejunum of a bloodsucking rhabditic nematode worm, occasionally proving fatal in prolonged cases, but capable of cure upon removal of all the parasites, and capable of prevention by scrupulous cleanliness.

Diagnosis.—The anæmia is so marked that there is seldom any difficulty in recognizing it, and therefore this symptom is well known to all doctors who have patients among the fellaheen. But the disease itself is rarely recognized in Egypt, for a generation has arisen which knows not Griesinger, and under ordinary circumstances the worms are not to be found in the evacuations. Even after thymol and a perge have been given to a patient fasting, care and patience are required to find the worms. This can easily be done after submitting the fæces to several washings with clean water, and examining the final deposit. The worms which are naturally white are generally discoloured by the fæces, and must be carefully distinguished from any accompanying oxyurides. It will be found that thymol has removed most of the fæcal odour.

The microscope furnishes the readiest means of discovering the parasite, for in most cases eggs can be found in a tiny portion of the suspected fæces, which, to make the examination more agreeable, may be washed in a test-tube with a weak solution of carbolic acid.

Symptoms.—These may be grouped into three classes—those affecting the digestive, circulatory, and nervous systems. They usually affect the patient in the above order, but most cases are so far advanced before they come under treatment that all three systems are affected. The worms are voided so seldom with the fæces that patients never know that they are suffering from entozoa unless they happen also to be the hosts of ascaris, oxyuris, or tænia.

Gnawing, throbbing *pain* in the epigastrium is the first symptom complained of, chiefly because it is constant, whereas severe colic and borborygmi of intestines are only present from time to time. The *appetite* is invariably affected, sometimes ravenous at the beginning, but later always capricious and diminished.

Vomiting and nausea were rarely complained of. *Constipation*,

when not under thymol and purgative treatment, was a very constant symptom in hospital ; 60 per cent. had suffered for a long time from obstinate constipation, 28 per cent. had had diarrhœa before admission, and 12 per cent. had no recollection of being troubled with either. None of the figures depending upon the memory of the patients must be taken as absolute truth, as the intelligence of many is of a very low order. Diarrhœa and even dysentery are not uncommon in very advanced cases, especially those complicated by Bilharzia ulceration in the rectum, and unless the patient is robust enough to support thymol such cases are apt to end fatally. However, I have had the satisfaction of curing some cases of anchylostomiasis which had been unsuccessfully treated elsewhere for several months as chronic dysentery. *Flatulence* of the lower abdomen has been mentioned by Dr. Lutz as a common symptom. I found it present to a slight extent in one third of the cases. The *urine* is not unlike that of ordinary anæmia, neutral or alkaline in equal proportion, and rarely acid, pale coloured, with specific gravity ranging from 1010 to 1015. A trace of albumen was present in all the most advanced cases, without casts under the microscope.

Pain in the head, generally referred to the temples, while in the knees there were invariably present great weakness and some pain : occasionally there was in addition pain in the shoulders. *Giddiness* is another very general symptom, and it is this as much as anything else which compels men to give up work. *Palpitation* of the heart, in the epigastrium, and in the temporal arteries is sure to be present in bad cases, while the anæmic murmurs of heart and neck are solely dependent upon the degree of anæmia, and can be banished by a prolonged course of iron. Hypertrophy of heart was noted and verified after death in some of the advanced cases. *Dyspnœa* and noises in the ears were present, as might be expected with marked anæmia. *Œdema* of legs, like albuminuria, is only to be seen in the worst cases, and some of these had general œdema when admitted in a dying condition. The tongue was extremely pale, the mucous membranes were excessively white, the face had an unhealthy yellow pallor, very different from the ruddy brown of the peasant in health, and the bloodless nails testified to the blood containing not more than half the normal number of red corpuscles.

The *skin* is always cold, and the temperature before thymol generally subnormal in uncomplicated cases. After excluding any fever produced by concurrent diseases, and any defervescence caused by thymol, I find that one third of my patients had a normal temperature during their stay in hospital, but that two thirds had a

distinctly subnormal range, varying from an average of 36·3° C., a.m., to 36·9° C., p.m.

Many of these patients when convalescent had an increase of half a degree, night and morning.

The *eyes* of patients show a pearly white conjunctiva, singularly in contrast with the yellow colour of the face. Dr. Scott kindly examined several men for me with the ophthalmoscope, and found in half of them a normal fundus, and in the other half a fundus very pallid. The refraction test showed astigmatism in many cases. I have never found any retinal hæmorrhages, epistaxis, nor general tendency to hæmorrhages, but in two cases there was melæna while under treatment.

The *facies* of the patient is characteristic, though it is difficult to describe his discontented, harassed expression, which sometimes changes to a ready smile after a month's stay in hospital. The worst cases are those which are always asleep, and cannot be interested in anything when they are awake. On the whole, *sleepiness* is decidedly a symptom. Dense *stupidity*, associated sometimes with reiterated demands for a favour already granted, shows that the bloodless brain is affected in all advanced cases, and at least three times I have found a condition of weak-mindedness which would have warranted the patients being sent to the lunatic asylum. *Debility and wasting* are, of course, important symptoms, but it must be remembered that when a man is so weakened by the disease that he cannot work, he ceases to earn money, and his food supply becomes limited.

Absence of patellar reflex is not surprising in cases of general debility and muscular weakness. In 35 per cent. of cases examined the reflex seemed unaltered, in 48 per cent. it was completely absent, in 5 per cent. it was decidedly diminished, and in 12 per cent., all of which were early cases, it seemed to me to be a little exaggerated. *Impotence* seems to be a decided symptom of anchylostomiasis.

Examination of the Blood.—I have notes of one hundred and seventy three cases in which the blood-corpuscles were counted on admission to hospital. In only three patients were the red corpuscles found to exceed 4,000,000, and even then the excess was extremely slight. 23 per cent. numbered between 3,000,000 and 4,000,000 to the cubic millimètre, 46·8 per cent. varied from 2,000,000 to 3,000,000, and 28·3 per cent. had less than 2,000,000 red blood corpuscles. The minimum recorded was 930,000 in a patient who afterwards did well. The average gain of red corpuscles during stay in hospital of these cases was 1,290,000, and could have been much more if it had been possible to keep the patients for a longer time.

Complications and Concurrent Diseases.—It is very rare to perform an autopsy upon an Egyptian of the peasant class without finding various entozoa, and the anchylostoma patients are no exception to this rule.

The *Distoma hæmatobium* of Bilharz is so common amongst men and boys that its presence is not always noted, and my cases probably included more than the eighty cases of which I have notes. At one autopsy there were forty worms in the blood of the veins of the liver. In experimenting on cases of Bilharzia with thymol (so far unsuccessfully) I have often found anchylostoma, though the patients had no symptoms or appearance of anæmia.

Oxyuris vermicularis was present in half the patients, and was usually completely expelled by the first dose of thymol. Though this worm is so common in Egypt, I hardly know whether it produces any bad effects.

Ascaris lumbricoides was noted in fifteen cases after the exhibition of thymol, and perhaps was present more often. Thymol expels it quite as well as santonine.

Tænia mediocanellata was present four times, and is not well acted on by thymol.

Tricocephalus dispar was only found in two of my cases. (Giles found it in nearly all his Assamese patients.)

Favus was present in many of the poorer Egyptians. *Pellagra* existed in twenty-eight cases, and being in an early form was cured by the tonic treatment. *Intermittent fever* occurred in nine of the cases. I have found anchylostoma in cases of *dysentery* and of fistula *in ano*, and have found it in patients who came to the hospital complaining of hæmorrhoids and prolapse of rectum. *Albuminuria* was present in thirty advanced cases, besides three others in which there was kidney disease. Nearly all the fatal cases passed, while in hospital, urine of uniform sp. gr., 1010. Three cases came under my care after they had had lithotrity successfully performed.

Chronic bronchitis may be regarded as one of the complications, having been present fifteen times. Ten patients with tubercle of lungs also harboured anchylostoma. I have also found them in isolated cases of cirrhosis of the liver, diabetes, rheumatism, heart disease, leukæmia, disseminated sclerosis, hasheesh delusions, etc.

Most of the fatal cases had loud anæmic murmurs, markedly subnormal temperature, slight general œdema, albuminuria, and great mental weakness.

The actual cause of death was exhaustion, from utter absence of rallying power. It is difficult to believe that the pathological effects

are induced only by hæmorrhage from the daily suction of scores or even hundreds of worms. In addition to the loss of blood we have general thickening and degeneration of the duodenum and jejunum, and consequent interference with normal digestion; then non-assimilation, and eventually a process of slow starvation. It is also worthy of consideration that there may be in prolonged cases some self-poisoning from the great number of bites in the walls of intestines containing ill-digested and perhaps decomposing food.

Post-mortem Appearances.—I have notes of twenty-six autopsies, ten of the patients having been brought to the hospital moribund.

The small intestines showed of course the most important changes. As a rule, there were many hæmorrhages and bites in jejunum and ileum, but in one of the cases where the bites were carefully counted there were only six in the jejunum and ileum, and no worms were found. In another case, however, there were five hundred and seventy-five bites in the small intestine, besides two hundred and fifty anchylostoma. In yet another there were one hundred bites, the farthest of which was $4\frac{1}{2}$ mètres from the pylorus. In only two cases was there much liquid blood in the intestine.

I have not observed the constant changes in the mucous membrane of the stomach described by Giles.

The position of the worms deserves notice. It was quite the exception to find any parasites in the duodenum. But, as a rule, the attached worms are all within 2 mètres of the pylorus, and have their heads, and sometimes half their bodies buried in the mucous membrane.

TREATMENT.—The rational treatment is, of course, twofold—to expel the worms and to treat the anæmia. Before I ever heard of **Thymol** as the specific vermifuge for this disease, I went through a weary apprenticeship of failing to get rid of the parasite with other drugs.

When I first learnt the powers of thymol on the anchylostomum, I experimented on a dozen patients with santonine, male fern, etc., before giving thymol. In every case the bulk of the worms were not removed until after the administration of thymol. Two patients voided three hundred and twenty-four and one hundred and twenty anchylostoma respectively after thymol, though not a single worm had been expelled by means of other drugs. But for the last four years I have looked upon it as waste of time to administer any other anthelmintic than thymol. The dose of thymol is of considerable importance. I quite agree with Sonsino, Giles, and other writers that small doses are valueless. I used at first to give, as recommended, 6 grammes in doses of 2 grammes at intervals every two hours, but to prevent unnecessary collapse I have for the last year only given

4 grammes as an adult dose, viz., 2 grammes at 8 a.m., and the remainder at 10 a.m. I am of opinion that 4 grammes are as efficacious as 6, and are certainly less dangerous. Warned by the death of at least one of my patients immediately after digesting the thymol, I have always administered to feeble men 25 grammes of brandy with each 2 grammes of thymol with the happiest results. For a day before and a day after the thymol the patient is kept on a diet of milk and soup. I began by giving a purge before and after the thymol, but for a long time now I have omitted the preliminary purge as being unnecessary, and as contributing not a little to the patient's exhaustion. At 12 noon two hours after the second half of the thymol, **Sulphate of Magnesia** or **Castor Oil** (the latter to be preferred) is given.

Large doses of thymol have poisonous effects upon the system, not unlike those produced by carbolic acid. The temperature is lowered one or even two degrees Centigrade, and both pulse and respiration are slowed. The patient remains for a few hours collapsed, giddy, and faint, and has to be kept lying down, but at sunset he is quite well again and asking for food.

The contra-indications for thymol are excessive debility, very low temperature, age above sixty, and advanced disease of heart or any other organ. Boys take it very well in half-quantities.

As a rule I have not considered it fair to submit patients to the depressing influence of thymol more often than once a week, but in the case of fairly robust men, who were anxious to make no long stay in hospital, I have often given it every four days. To prevent any possible spread of the disease, the evacuations of patients ought to be treated with some disinfectant, such as **Hydrarg. Perchlor.**, 1 in 500.

The general treatment of the anæmia is, of course, of great importance from the very first. The hospital mixed diet, with its meat and better bread, is superior to the food obtained by patients before admission, and contributed greatly to their improvement in health. In spite of the disturbances of the digestive tract, men, unless dying, were always ready to eat ordinary and extra meals.

Iron I have tried in various forms, and though some few patients complained of headache at first, it was greedily absorbed by the economy. My only desire was to find that preparation of iron which could be taken in large doses, and would quickly banish the anæmia. The peroxide can be borne in large quantities, but the microscope proved that the blood was most benefited by the daily supply of 1½ grammes of the **Sulphate of Iron** in water in three equal doses. The patients during their stay in hospital were always taking iron, except on the days devoted to thymol. During the winter some of the feeblest

patients were given every day a little brandy with advantage. The treatment of other symptoms was too simple to need mention.

Transfusion of blood, or even of a saline solution, I have often thought might be beneficial to cases admitted to hospital in a dying state, but as yet I have not made the experiment.

ANEURISM.

Dr. Ransohoff appends the following conclusions to a paper on aneurism: (1,) Extirpation is the ideal method. It should be resorted to unless there are weighty reasons against it; (2.) In aneurisms of the fore-arm and of the leg no other method should be adopted. (3,) Aneurisms which have suddenly grown large from subcutaneous rupture of the sac, and those in which rupture is impending, should be subjected to extirpation: (4.) In recent traumatic aneurisms the injured vessel should be divided between two ligatures. When a sac has formed it should be excised; (5,) When other methods have failed, extirpation should be tried before resort is had to amputation; (6,) In arterio-venous aneurisms extirpations should be practised, if any operation is indicated; (7,) Proximal ligation is to be reserved for cases of idiopathic or spontaneous aneurisms in which the age of the patient or an enfeebled condition from other causes would make a prolonged operation hazardous, and for cases in which the position of the tumour precludes the possibility of extirpation.

REFERENCE.—"Annals of Surgery," Jan., 1894, and "Braithwaite's Retrospect."

ANGINA PECTORIS.

True and False Angina Pectoris.—Dr. Huchard gives the following table of differential diagnosis between true angina and hysterical pseudo-angina.

TRUE ANGINA.	HYSTERICAL PSEUDO-ANGINA.
Most common between forty and fifty years.	At every age, even six years.
Most common in men. Attacks brought on by exertion.	Most common in women. Attacks spontaneous.
Attacks rarely periodical or nocturnal.	Often periodical and nocturnal.
Not associated with other symptoms.	Associated with nervous symptoms.
Vaso-motor form rare. Agonizing pain, and sensation of compression by a vice.	Vaso-motor form common. Pain less severe. Sensation of distention.
Pain generally of short duration; attitude; silence; immobility.	Pain lasts one or two hours; agitation and activity.
Lesion: Sclerosis of coronary artery.	Neuralgia of nerves.
Prognosis: Grave, often fatal.	Never fatal.

Huchard also discusses the prognosis of angina: Sudden death may occur during the course, or at the end of a painful paroxysm, or, by sudden syncope unattended by pain. Anginal patients are very liable to syncope; the patient falls as if struck by lightning. In other cases death is not so sudden, but rapid, and may be attended with symptoms of asphyxia instead of syncope. In other cases the disease may be terminated by intercurrent affections. The predisposing causes of sudden arrest of the heart in angina are probably lesions of the cardiac ganglia and local ischæmia of the myocardium; the exciting causes are spasmodic contraction or thrombosis of the coronary arteries.

TREATMENT.—The author gives **Iodide of Potash** for three or four years in doses of 45 to 60 grains daily, taking care to suspend it for eight or ten days each month. In rheumatic cases **Sodium Salicylate, Rest, Even Temperature,** and **Dietetic Care** are always important. The inhalation of **Nitrite of Amyl** (this drug relaxes the peripheral arterioles, lowers the blood pressure, and relieves the heart). **Nitroglycerine** and hypodermic injection of **Morphia** are also useful for the same purpose, and act much in the same way. **Hot Applications** to the chest, **Faradization** of the cardiac region, with internal administration of diffusible **Stimulants, Belladonna,** and small doses of **Opium** have been recommended.

REFERENCE.—"Med. Record," Oct. 14, 1893.

Synopsis.—(Vol. 1894, p. 77.) Milk Diet and Pre-digested Foods are often of service. Dyspeptic conditions require either Alkaline Bitter Stomachics, *e.g.*, Sodium Bicarbonate with Nux Vomica and Calumba one hour before the two principal meals. Or dilute Hydrochloric Acid in compound infusion of orange peel after meals with or without a few grains of Pepsin. For flatulent digestion, a grain of Thymol in pill or a drop of Creasote directly after meals. As aperients, a dinner pill containing Aloes 1 or 2 grains; Ipecacuanha ½ grain; Nux Vom., 1 grain; Soap, 1 grain, and if insufficient to be followed occasionally by a teaspoonful of Carlsbad or Homburg Salts in ½ a tumblerful of hot water next morning; or if the liver is sluggish a few grains of Blue Pill or ½ or ¼ grain of Podophyllin at bed time, with 2 or 3 grains of Compound Rhubarb Pill. In cases of anæmia and of cardiac debility, mild preparations of Iron with small doses of Digitalis are useful; Arsenic is at times more useful than iron, and is much used in the intervals between the paroxysms. Balfour advises Fowler's Solution, 3 to 5 ♏, with Iron and Strychnine twice daily after food. For highly neurotic cases Iron or Arsenic and Potassium or Sodium Bromide in 5 to 15 grain doses, or Zinc Valerianate, grain doses, in a coated pill three times daily after food, and sometimes the combination of $\frac{1}{60}$ grain of Phosphorus. Occasional recourse to a mild iron tonic with 5♏ doses of Digitalis, or a pilule of Nativelle's digitaline ($\frac{1}{100}$ gr.) appears to have warded off the attacks in some cases. Cardio-vascular degeneration and gout call for Potassium Iodide in 5 to 15 grain doses t. d. In malarial cases, if arsenic

fails, Quinine must be used, but as arterio-sclerosis will usually be present, Potassium Iodide is often indicated. Cocaine has recently been lauded as preventive of the attacks in doses of ⅓ of a grain t. d. Huchard considers the following as dangerous or ineffective, viz.: electricity, cocaine, bleeding, bromides, hypnotics, oxygen inhalations, belladonna, aconite, and he does not advise the use of sodium nitrite.

ANGIO-NEUROSIS. *W. Ramsay Smith. B. Sc., M.B., Edin.*

Within very recent times several distinct diseases have been ranged in the category of angio-neuroses. Graves's disease and Raynaud's disease[1] may be considered the terminals of a series that includes hay-asthma, angio-neurotic œdema, Nothnagel's angina pectoris, urticaria, certain forms of menorrhagia, and many other such apparently diverse conditions. The time has not yet come to make an inventory of the various angio-neuroses, or to attempt to exhibit their inter-relations. At this stage of study of the subject it will be most profitable to leave the discussion of definite diseases to the articles dealing specially with them, and in this article to collate cases of some angio-neuroses less likely to be noticed in particular discussions, but all the more deserving to be studied on account of their more varied relations, and of the problems that they raise, and the principles they bring into prominence.

The very distinct and definite form of skin disease allied to erythema and urticaria, which I described at the annual meeting of the British Medical Association, at Newcastle in 1893,[2] forms a convenient starting point from which to consider the relations of several more or less closely allied conditions. In this disease, which I may for the time being call erythema-urticaria, the appearance of the distinctive rash is preceded by a certain amount of constitutional disturbance, accompanied by a feeling of heat and itching locally. The rash may appear on any part of the body, but it seems to select certain parts by preference, *e.g.*, a zone on the upper part of the abdomen, and the limbs; and it may be irregular in its distribution, or bilaterally symmetrical, or it may follow the course of certain nerves. The rash varies in character, but every variety may be seen on the same subject at one time. The appearance at first is generally that of round white wheals varying in size, usually from a quarter to half an inch in diameter; then in a few hours the wheals become erythematous and afterwards may go on to papules, blebs, and even pustules. Some of the wheals may disappear at an early stage; but most persist and lead to diverse structural changes in the skin. In a few days a second attack may occur showing all the characters of the first, and such recurrence may go on for two or three weeks. The complaint may recur at intervals of a few months, or it may not occur

again. A study of about eighty cases has shown that while no age or sex is exempt the majority of sufferers are female children.

The accompanying illustrations show some very characteristic appearances in a subject who has suffered from the disease for upwards of four years. *Fig. A*, *Plate I*, which was taken on the first day of an attack, shows some of the wheals with a central mark like the bite of an insect, a common but not a constant feature. *Fig. B*, taken at the same time, shows wheals a few minutes old. *Figs. C* and *D*, taken twenty-four hours later, show the spots on the right leg about the same in number, but less "angry," and those on the left increasing in number. *Fig. E*, taken three days after the last, shows a crop of spots about six hours old, in the intensely itching stage, the whole skin of the part being covered with fleeting erythematous patches of a pink colour on which the single spots stand out as distinct wheals. In this particular attack, which was a very severe one, certain spots on the forearms presented ultimately the typical appearance of erythema nodosum in its final stage. *Fig. F*, which is a photograph of the boy's sister taken next day, shows a symmetrical disposition of the spots, those on the left arm being in process of eruption and coming out a day later than those on the right. The boy and girl and the third child of the family, an infant of a few months, invariably have an attack at the same time.

A maternal uncle of these patients has described an attack of a severe form of this disease in his own body, associated with high temperature, a feature very uncommon in the cases I have seen. The symptoms came on at once and in sequence for three days—nerve storm, etc., soles, palms, forehead, face, hair, back, front, abdomen, chest, limbs ; erythematous, papular, shotty, patchy, confluent, wheals, puncta, subcutaneous nodules, dropsical congestion of face, congested eyelids ; temperature 102·5° F. or 103° F., maximum ; pulse 100–120. The skin was persistently erythematous for four weeks or more all over. A single round wheal appeared at two separate places three weeks after. There was no recurrence. The patient says in an interesting note : "The conditions described had followed three weeks' exposure to the June heat (varying from 70° F. to 90° F.) of Paris, where apparent "mosquito" bites had, night after night, produced, on face and other parts accidentally exposed, infiltration swellings of sizes varying from a shilling to a crown-piece. The readiness to develop this local infiltration was very marked. The skin was for weeks in a state of heat-irritation, greater or less. The urticaria attack itself was directly sequent on (*a*,) over-heating after breakfast, and (*b*,) ingestion of tinned tongue. Experience of bug-bites twelve

Fig. A.

Fig. B.

Fig. C.

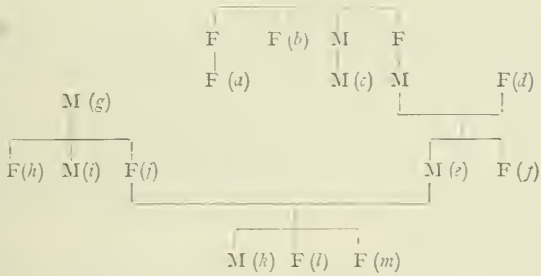
Fig. D.

Fig. E.

Fig. F.

years previously and, again, of bug and "mosquito" bites in Paris four years previously, found the same readiness to inflammatory infiltration and reaction. On the other hand, repeated and prolonged exposure to almost all the major infections—including enteric fever, typhus, small-pox, whooping cough, diphtheria—has, since scarlet fever at three, and measles at six years of age, resulted in no attack of any sort, unless occasional follicular tonsillitis be regarded as vicarious of all these. The only other skin affection, within memory, was a symmetrical wheal urticaria, six years previously; the rash appearing on the external surface of the hips and thighs for about an hour every evening and about the same hour every evening for three weeks. The condition was associated with the hard-work end of a college session. —W. L. M."

This individual case shows how very diverse may be the local manifestations of angio-neurosis in one person and in one attack—the body being a veritable *locus classicus* of eruptions for the time being. The family history of the three children shows how diverse may be the manifestations of angio-neurotic tendencies in different individuals. The following is the history so far as it appears worthy of record :—



M is male; F is female; (*a*) is the subject of general angio-neurotic œdema as reported in the "Practitioner"[3]; (*b*,) died of epithelioma of the urethra; (*c*,) is the subject of asthma and most extensive and chronic eczema of the whole body; (*d*,) was subject to migraine, asthma, and other visceral neuroses, and thinning and curving of the nails; (*e*,) suffered from migraine; (*f*,) suffers from periodical thinning and curving of the finger nails; (*g*,) was an extreme example of a slow pulse (20–30 a minute), a family feature; (*h*,) suffered from repeated attacks of erythema of the fingers; (*i*,) is the case of severe erythema-urticaria reported above; (*j*,) suffered from subcutaneous abscesses and localised lupus; (*k*,) is the case photographed above; (*l*,) is the sister, photographed, and the subject of abnormality of the

finger nails recorded in the "Journal of Anatomy and Physiology"[4]; (*m*,) is subject like the two last to erythema-urticaria.

Thus there is illustrated in this family record: on the one side typical angio-neurotic œdema, cancer, asthma associated with eczema, asthma associated with migraine and abnormalities of nutrition of the finger nails; on the other side characteristically slow pulse, erythema of the fingers, severe erythema-urticaria with diverse cutaneous and subcutaneous lesions, subcutaneous abscesses and localised lupus; and from a union of the two strains there has sprung a family of three all subject to an angio-neurosis showing itself as a definite erythema-urticaria.

At this point it will be well to record *other manifestations of angio-neurosis* in cases where there is evidence of a neurotic basis.

In one family I found a child suffering from erythema-urticaria of the papular, almost pustular, form; another child subject to "ulceration of the bowels"; the mother a sufferer from migraine and a whole train of internal "-algias," and formerly from subcutaneous "swellings like hazel-nuts," probably circumscribed œdema; and the father also subject to migraine.

A patient of mine, who suffers from Graves's disease, is subject to erythema-urticaria. Her mother shows visceral neuroses, and her father died of phthisis.

In another family I found the mother, subject to asthma, suffering from erythema nodosum; a daughter a sufferer from typical erythema-urticaria, and a brother suffering from localised cellulitis.

In still another family I have found one sister suffering from localised œdema and other angio-neurotic symptoms, and another suffering from scirrhus of the breast.

As to cases of individual patients, I have seen another case of erythema nodosum in a woman the subject of chronic bronchitis and asthma. Another patient, when convalescent from typhoid fever, suffered from œdema, with localised erythema of the left leg, followed by angio-neurotic œdema of both legs, and desquamation. She formerly for a period of four years suffered from a series of boils or abscesses, and was also subject to a "chest affection." In another patient I found erythema nodosum associated with chronic psoriasis. Two cases of cancer under my care are associated with painful œdema that cannot be explained entirely by pressure on vessels or nerves.

Trousseau[5] notes the hereditary tendency to urticaria, the mother of two sufferers being herself a victim of it and the subject of anomalous nervous symptoms; and he records a case of urticaria

associated with nervous symptoms of a most formidable character. Certain circumstances led him to believe as an explanation of the association of urticaria with bronchial conditions that a "bronchial eruption" might occur in urticaria "precisely as in measles."

To come to recent times, I would call attention to Dr. Allan Jamieson's record[6] of the condition that he inclines to call urticarial prurigo, occurring in the family of a medical man, himself subject to urticaria. In several of its strange features that condition resembles the disease I have described as erythema-urticaria. Dr. Jamieson discusses the relation of urticaria to circumscribed œdema, migraine, and other allied disorders, basing his discussion on illustrative cases, in a way that brings the neurotic basis in these various conditions into prominence.

As regards the erythemata, so many cases of the association of one form with another have been recorded that one has little hesitation in classing them all as effects of a common cause—a disturbance of the vaso-motor system; and so many "marginal cases" have been observed that the dividing line drawn by Trousseau between erythema nodosum and other erythemata may well be erased. Dr. Allan Jamieson has found erythema nodosum in an epileptic subject; he has also noted its association with erythema multiforme, and the association of erythema multiforme with chilblain erythema. Boeck has pointed out the association of angina with erythema multiforme and peliosis rheumatica: and so on. Dr. Gifford Nash[7] reported four cases of erythema nodosum occurring in one family within a period of ten months, and stated that a maternal aunt of the family living in the same place thirteen years before had suffered from that disease. As to family predisposition in Dr. Nash's cases and in two cases of Dr. Pye-Smith's, there is the possibility, so far as the records go, that the predisposition was to an instability of the vaso-motor system, and that locality or climatic conditions had something to do with the particular manifestation.

Similar hereditary tendencies in the case of certain forms of herpes have been noted by Dr. Dubler and Dr. G. A. Gibson.

Panas[8] records a case of dry gangrene of the foot in a patient of nervous temperament with a neurotic family history. The anterior tibial and other nerves showed pathological changes. Ehrl[9] reports a case of sloughing gangrene of parts of the face and left arm in a neurotic girl, whose sister also later on showed localised gangrene of the left breast and cheeks. Singer[10] records the occurrence of neurotic gangrene in a girl who exhibited dissociation of sensation and signs of hysteria. Féré[11] reports the occurrence of cutaneous gangrene in a

patient under treatment for round ulcer of the stomach, and suggests that both lesions may be due to the same nervous cause.

So much, then, regarding the characters and relations of the manifestations in which an angio-neurotic basis may be discovered. The point now, and it is the standpoint from which to view the whole subject, is this: Given an unstable vaso-motor system manifesting its effects so diversely in the same and in different organs, the question arises, "*What are the causes that may influence such a system? in other words, What are the exciting causes of such angio-neurotic manifestations?*"

Passing by local peripheral irritation of any and every sort acting reflexly, as requiring merely to be mentioned in order to be appreciated, and noting *heat* as a cause that has yet to be studied, there remain for consideration as exciting causes, emotion, toxis, and climatic conditions.

Emotion as a Factor in Angio-neurosis.—Emotion as a cause of pathological conditions has received wide attention. A very complete account of the subject will be found in Féré's "Pathologie des émotions,"[12] chap. vi. Among the skin diseases there enumerated that have been produced by painful emotions, are local syncope, erythema, urticaria, purpura, eczema, psoriasis, herpes, pemphigus, prurigo, vaso-motor œdema—all of which may properly be classed as angio-neuroses. But a mere enumeration of conditions following emotion is of little help in considering the present subject. What one desiderates is a record, in every case, of coincident or associated conditions or well marked tendencies in the individual, and a careful statement of the family history. Only with these before us can we appreciate the neurotic element at its true value as one of the conditions of the manifestations. Such records are scarce.*

To come to cases where a neurotic basis has been noted. The part played by emotion in the etiology of such diseases as Raynaud's disease, diabetes, and Graves's disease is well recognized.

"Coulon records three cases in which jaundice supervened in three children of nervous diathesis shortly after emotional excitement—in one case, a girl aged nine after a fright; in two others, girls aged ten and a half and thirteen and a half years respectively, after a fit of anger produced by punishment at school."[13]

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* I must mention for honourable exception a post-graduate lecture by Dr. G. A. Gibson, on "Vaso-motor Neuroses" ("Edin. Med. Journ." for December, 1888), which I had not read when this article was written. In it he notes and emphasises the neurotic basis and its diverse manifestations.

Dr. Lubbock[14] records a case of a highly sensitive young lady who thirty-six hours after an instrumental labour developed jaundice, due possibly to emotional disturbance, but possibly also, as the record shows, to foul lochia.

I have seen repeated attacks of profound jaundice lasting only for a few hours in a woman suffering from visceral neuralgia and the subject of migraine.

In view of our ignorance of the mode of production of jaundice in such cases, one hesitates to quote these cases unreservedly as instances of angio-neurosis due to emotion.

But in two cases I have recorded[15] of general angio-neurotic œdema, prolonged and profound mental emotion in neurotic subjects was undoubtedly a factor in the causation.

Ehrman[16] describes a particular form of skin disease, which he terms dermographismus, and ascribes it to mental excitement (without the presence of a toxic substance) acting on the nervous system. He allows that this condition may co-exist with urticaria, but he holds that the causation is different—urticaria, in his opinion, depending upon the presence of some toxic substance. That a toxic agent is necessary in the production of urticaria is a statement to which many will demur.

Toxis as a factor in Angio-neurosis.—This again has been studied in connection with diseases presenting a neurotic basis. Frerichs and Saundby have described septic diabetes. The connection between toxis and Graves's disease and allied conditions is dealt with most recently in Dr. Edward Blake's "Myxœdema, Cretinism, and the Goitres."[17] Dr. Blake in his former work "Sewage Poisoning"[18] enumerates diseases in which one may look for sewage infection as a cause; and many of these may, without doubt, be regarded as angio-neurotic. Further, in "Septic Intoxication,"[19] section iii, he gives records of cases of the sort most needed in investigating this subject.

I have found erythema-urticaria coincident with septic poisoning of the hand; erythema nodosum, in more than one case, evidently due to poison from without; erythema nodosum and chronic psoriasis coincident with sewer-gas poisoning; and angio-neurotic œdema and erythema in the course of typhoid fever.

The association of urticaria with the ingestion of poisonous substances is well known. Frank[20] saw urticaria complicated in such a way with quotidian and tertian ague as to appear epidemic. Copland[21] saw it, though not so often as erythema and roseola, in acute rheumatism, also in association with cutaneous eruptions, specially erythema,

roseola, lichen, occasionally impetigo, and with chronic visceral disease and cancer, and after miscarriage in nervous women.

In the course of a report on "A Case of Septic Osteo-myelitis with erythema multiforme"[22] Dr. Colcott Fox remarks very pertinently that we must regard eruptions of the erythema multiforme kind as possible in any toxæmia, whether the agent be inorganic or organic ; and after enumerating some of the diseases in which such eruptions occur, he gathers together and compares statistics of eruptions in cases of influenza, infective osteo-myelitis, general pyæmia and infective endocarditis.

Dr. Suckling[23] has recorded two cases of scarlet rash after enemata, and refers to Dr. Burford as having noted such cases. Dr. Burford[24] pointed out and illustrated the cause of such occurrences, showing that fæces if dry may remain innocuous in the intestine for an indefinite period, but when they are liquefied a diffusion of toxic matter occurs from the bowel into the general system, often giving rise to a sharp attack of urticaria.

Rashes after child-birth are far from uncommon, and unfortunately give rise too often to wrong diagnosis of scarlet fever or erysipelas. Gaertig[25] records a case of a woman who in three successive confinements developed an erythema after labour, each labour being complicated with flooding and adherent placenta.

Wasp-stings sometimes give rise to severe constitutional symptoms with local erythema. Dr. Balfour Marshall[26] records a case of wasp-sting giving rise to itchiness of the body, great swelling of the face, and a scarlatinal-like rash on the chest and abdomen. Dr. Saunders[27] records a case with similar symptoms.

The records of cases of skin rashes following the introduction of poisons into the system or the absorption of poisonous substances generated in the intestines, are very numerous ; but the majority of them lack the elements that prove of value in the study of the etiology of those rashes, *viz.*, a statement of the associated conditions and the constitutional and hereditary tendencies.

Climatic Conditions as a factor in Angio-neurosis.—This subject has received but little attention. Trousseau[28] noted that hæmorrhages in typhoid fever occurred coincidently with passive hæmorrhages in patients suffering from other diseases—purpura hæmorrhagica, black small-pox, and numerous examples of petechial scarlatiniform eruptions of the sort that occurs at the beginning of varioloid affections ; and he felt constrained to ask whether the influence of a prevailing "medical constitution" might not sometimes explain the occurrence of these hæmorrhages. He also, following Dr. Leudet, of

Rouen, noted that dropsies consecutive to enteric fever occur more frequently in some localities than in others—they are rare in Paris but common in Rouen—and suggested that "the prevailing medical constitution" had something to do with their production. Copland[29] mentions "atmospheric vicissitudes" as causes of local affections, particularly inflammations, occurring in typhoid fever; and in another place[30] states that though hæmorrhages (in general) are scarcely ever epidemic, yet at Breslau they prevailed at one time to a remarkable extent—children having epistaxis, adults hæmoptysis, and the aged hæmorrhoids.

This summer (1894) I saw two cases of hæmorrhage in typhoid fever in the early stages, within a period of two months, during which I also attended three cases of erythema nodosum, eight or ten cases of erythema-urticaria, several cases of septic poisoning, several cases of erythema, one or two cases of angio-neurotic œdema, and numerous cases of neuroses of various sorts. After making all allowance for "coincidences," etc., I am forced to conclude that climatic conditions must be admitted as a most important factor in the etiology of angio-neurotic manifestations.

An extensive study of the disease I have called erythema-urticaria has led to the conclusion that in the apparent epidemic incidence of that disease, climatic states form the only common condition to which the patients are exposed.

TREATMENT.—It would be presumptuous in anyone to attempt to discuss the treatment of all these various conditions in the bounds of a short article. But after noting as a self-evident proposition that all sources of reflex irritation must be attended to, one may indicate briefly some drugs that have found favour by their general usefulness in many of these conditions. **Arsenic** has long held a foremost place in the treatment of many conditions now classed as angio-neurotic, especially in such manifestations as asthma. Its effects may be exercised in two directions, (*a*,) as an antiseptic in the alimentary canal, and (*b*,) as a food for the nervous system. **Strychnine** likewise has a double action, (*a*,) on the intestines to cure constipation, and (*b*,) on the nerve centres. It has been employed in asthma and associated conditions. In neurotic subjects with weak heart I have found it relieve the hard, racking spasmodic cough of bronchitis when other remedies have failed. **Quinine** is more generally useful than one would expect, especially in adults. One sufferer from severe erythema-urticaria informed me that this drug subdued the symptoms like a a charm. It may be well to recall the fact that Watson[31] was so well satisfied with this drug in the treatment of erythema nodosum that he

"felt no temptation to try any other." **Ergot** has been employed in many angio-neurotic conditions. In all cases where there is evidence of toxis either from without or from within as a cause, **Calomel** is most to be depended upon. In constipation in fevers, *e.g.*, typhoid, I have been constrained to prefer calomel to enemata. But in these conditions if one is afraid to use either, and hesitates to let the bowels take their own time to move, then **Salol** dissolved in Christy's oil (1 drachm of oil will dissolve 10 grains of salol), with other substances to choice and taste, will cause an evacuation without interfering with the regularity of the temperature chart.

REFERENCES.—[1] "American Journal of the Medical Sciences," Feb., 1894, p. 130; [2] "Edin. Med. Journ.," March, 1894; [3] "Practitioner," April, 1894; [4] "Journ. of Anat. and Phys.," vol. xxvi., p. 406; [5] "Lectures on Clin. Med." (New Syd. Soc.), vol. ii., p. 285; [6] "Diseases of the Skin," 2nd ed., p. 126; [7] "Lancet," July 7, 1894, p. 27; [8] "Brit. Med. Journ.," Epitome, July 21, 1894, p. 9; [9] Ibid.; [10] Ibid., Nov. 18, p. 81, 1893; [11] Progrès Médical," vol. i., p. 391, 1894; [12] "Pathologie des Emotions," Paris, 1892; [13] "Brit. Med. Journ.," Epitome, May 19, 1894, p. 77; [14] Ibid., April 21, 1894, p. 896; [15] "Lancet," July 14, 1894, p. 76; [16] Ibid., June 30, 1894, p. 1634; [17] "Myxœdema, Cretinism, and the Goitres" (Wright & Co., Bristol), 1894; [18] "Sewage Poisoning," p. 14; [19] "Septic Intoxication," p. 44, et seq.; [20] "Copland's Medical Dictionary," vol. iii., part ii., p. 1238; [21] Ibid; [22] "Lancet," Aug. 4, 1894, p. 255; [23] Brit. Med. Journ.," June 2, 1894, p. 1190; [24] "Lancet," Dec. 13, 1888; [25] "Brit. Med. Journ.," Epitome, Sept. 22, 1894, p. 46; [26] Ibid., July 29, 1893, p. 292; [27] Ibid., Sept. 30, 1893, p. 772; [28] "Lectures on Clin. Med." (New Syd. Soc.), vol. ii., p. 333; [29] "Copland's Medical Dictionary," vol. i., p. 1002; [30] Ibid, vol. ii., p. 65; [31] "Principles and Practice of Physic," 4th ed., vol. ii., p. 923.

Synopsis.—Vol. 1892, p. 109, Asthma and affections of the skin; p. 230, Erythema multiforme and other erythemata classified; p. 420, Psoriasis an angio-neurosis. Vol., 1893, p. 221, The erythemata and toxis. Vol. 1894, p. 289, Eruptions and fevers.

ANOREXIA.

Synopsis.—(Vol. 1894, p. 25.) Penzoldt found that Orexin restored or increased the secretion of hydrochloric acid by the stomach. He gives 5 to 7 grs. daily at 10 a.m. for periods of one to six days, one dose often sufficing to restore an impaired appetite.

ANTHRAX.

T. Colcott Fox, M.B.

Maffucci's[1] treatment consists in the injection of 1 per cent. solutions of **Carbolic Acid** into the pustules and around.

Sistini used 3 per cent. and 2 per cent. solutions, and injected 1 gramme of fluid each time. Eight, three and two injections were given on three consecutive days respectively. Corrosive sublimate dressings were applied, and large quantities of **Phenate of Quinine** were given internally. The patient recovered.

The "Lancet,"[2] mentions that Jarnovsky reported seventy-two cases successfully treated by similar injections, as others have done.

Moore records a case in which another method of treatment proved successful. He excised the whole of the pustule and dressed the wound with **Ipecacuanha** and water and double **Cyanide**. 5 grains of ipecacuanha with $\frac{1}{6}$ of a grain of **Morphine** were given every four hours. Ipecacuanha is fatal to the bacilli anthracis, but not to the spores, which are fortunately not present in the human body in these cases.

Anderson,[3] of Mirfield, thinks the method by excision unnecessarily severe, and has been successful by making a thorough application of pure liquid **Carbolic Acid** all over the pustule and just beyond its margin.

An interesting and comprehensive report on anthrax in London has been prepared by Dr. Hamer for the London County Council.

REFERENCES.—[1] "Practitioner," quoted from "Lo Sperimentale" vol. i, p. 4, 1894; [2] "Lancet," Nov. 25, 1893; "Brit. Med. Journ.," 1894.

[*Editorial.*

Müller[1] refers to different views in connection with local treatment. It is impossible to destroy the disease by excising the site of inoculation. In guinea-pigs amputation of a limb two or three hours after the foot has been inoculated cannot save the animal. By the time the injection is ended absorption must have commenced, as is shown by the rapid proliferation of the bacilli in the tissues. The disease produced by anthrax would appear to be largely due to toxic action. It may, however, be difficult to find bacteria in the blood; when absorbed they may be deposited in parts where the circulation is slow, as in the liver, spleen, and marrow of bones. It has been shown with almost certainty that products may be isolated from anthrax cultures, which produce symptoms like those due to anthrax. Whether phagocytosis plays a part in human anthrax is undecided. The author's observations would lead to a negative conclusion. Different organs have different capabilities of dealing with anthrax. Thus, in rats the spleen seems to have the chief action, but in rabbits the liver. In man enlargement of the spleen is noted early.

TREATMENT.—It must be the object of treatment to get the cells at the site of inoculation to arrest the dissemination of the bacteria, and to protect the cells in the whole body against the poisoning. If excision of the inoculated part cannot arrest the disease, it might be thought that the anthrax bacilli and their products might be let out by incision. The author concludes, however, that incision should

not be practised. Anthrax is one of the most virulent of the blood parasites, and by incision there is the danger of a fresh invasion of the blood in the vessels thus laid open. The products at the site of inoculation are harmful to the individual if absorbed, but they are also destructive to the anthrax bacilli *in situ*. The line of treatment recommended by the author is the following : The affected part and adjacent joint are fixed to prevent dissemination. The limb is also elevated to assist the venous return so that more arterial blood may come to the part. **Mercurial Ointment** is applied to prevent secondary infection. Means are adopted to improve the circulation, such as **Alcohol** in large doses and nutritious diet. All the cases, including severe ones, which have been thus treated in von Bramann's clinic since 1890, have recovered.

REFERENCE.—[1] "Brit. Med. Journ."

Synopsis.—(Vol. 1894, p. 79.) Strisover injects 8 to 10 syringefuls of 3 % **Carbolic Acid** solution into the centre of the ulcer.

ANUS.

Hartmann[1] says that tuberculous ulceration of the anus is much less common than fistulæ and tuberculous abscess. The affection appears to be much more common in the male sex. In many cases diarrhœa was a prominent symptom. According to Hartmann the disease commences insidiously, and is first recognized by the presence of slight pain during defæcation. In the majority of cases the ulceration extends upwards as far as the level of the inferior extremity of the rectum; in two cases only out of twenty-nine cited was it entirely cutaneous. In nearly half of the cases enlargement of the inguinal lymphatic glands was observed. The growth of the ulcerations is very slow. After having attained a certain size they remain stationary, if not treated.

TREATMENT.—Hartmann recommends ablation of the ulcer with the **Thermo-cautery** or with the **Galvano-cautery**, if the condition of the patient will admit of it. In some cases much good has followed the use of **Iodoform Ointment** after the greater part of the ulcer has been removed. If the general condition of the patient does not admit of these procedures it is recommended that general treatment for tuberculosis should be carried out. Lastly, pain may be relieved by the use of **Opium Suppositories**, the application of **Chloral**, 1 per cent., or of a mixture of **Subnitrate of Bismuth** and **Iodoform.** In one case success was obtained by applying a $\frac{1}{8}$ per cent. solution of **Nitrate of Silver** regularly for sixteen months.

A. L. Berger[2] speaks well of the treatment of pruritus ani by

inserting into the orifice (for about 1 inch) a piece of cotton wool soaked in **Liquor Calcis Chlorinatæ.** When slight burning or smarting is felt, the plug should be extracted, and the anal region washed out with the same lotion, after which the parts should be left to dry spontaneously. The itching is said to vanish instantaneously, while after a few applications of the remedy any accompanying symptoms (such as swelling, eczematoid rash of the perineum and scrotum, etc.) also disappear.

Balfour[3] reports that he has almost never failed to obtain prompt relief in cases of pruritus of the anus and vulva from an ointment containing 80 grains of **Calomel** to the ounce of **Vaselin** or other excipient.

REFERENCES.—[1] "Brit. Med. Journ."; [2] Ibid; [3] "Med. Age," Dec. 26, 1893.

Synopsis.—(Vol. 1894, p. 80.) Adler advises **Bland Diet**; avoidance of drastic purges; mild aperients or enemata of **Warm Water** or **Flax-seed Tea.** To relieve spasm of sphincter, introduce the following half hour before using the enema: ℞ Ext. Belladonn. gr. ½ to ½; Cocain. Hydrochlor. gr. ¼ to ½; Ol. Theobrom. gr. 10, M. et ft. suppos.; or the following ointment (Cripps'): ℞ Ext. Conii ʒij; Ol. Ricini ʒiij; Ung. Lanolini q. s. ad ʒij. M. Smear a small quantity over the parts five minutes before a motion is expected, and also afterwards. Rigid cleanliness is important. **Nitrate of Silver, Acid Nitrate of Mercury, Fuming Nitric Acid, Carbolic Acid, Sulphate of Copper,** and the **Actual Cautery** are all advocated, but the first is best and is applied in a solution of 10 to 30 grains to the ounce once every twenty-four to forty-eight hours. A 4 % solution **Cocaine Hydrochlorate** should be applied before any caustic. After applying **Nitrate of Silver,** smear with **Iodoform Ointment,** 30 grains to the ounce, or use **Iodol** daily, introduction of a full-sized bougie of wax or tallow to stretch the sphincter, previously using **Cocaine** or **Belladonna Ointment.** The operative measures are: **Forcible Dilatation, Incision** or **Dilatation** and **Incision** combined. The last is the most certain.

APPENDICITIS.

A. W. Mayo Robson, F.R.C.S.

Although it is almost impossible to add anything new to the subject of appendicitis, it has been very fully and moreover very usefully discussed in the various journals during the past year; in fact the literature of the subject is so great that it is quite impracticable to notice all the papers in a short article.

As Dr. Rushmore has remarked, "the treatment of appendicitis by early operative interference appears to be passing through the same stages that have marked the progress of almost every important change proposed in the management of either medical or surgical diseases. Ridicule, sober judgment based on experience, and adoption or rejection, constitute these three stages." The

first is passed, and we are now well advanced in the second ; probably the ultimate issue will be found in a middle course between the American and English methods, for while English surgeons may often be rather too conservative, some Americans advocate early operative interference in every case.

There is perhaps no subject of greater interest to both physician and surgeon, or presenting greater difficulty in deciding on the appropriate line of treatment to be pursued in each individual case, than that of inflammation starting in the neighbourhood of the cæcum and for so long known as typhlitis or perityphlitis, but which more recent researches have told us is practically always dependent on appendicitis in one or other of its forms. I wish to be quite clear, in the first place, as to what is meant by appendicitis ; and to understand this it may not be unprofitable to consider the appendix vermiformis as a thick hollow tube of adenoid tissue resembling the tonsils in structure, lined on its inner surface by a layer of epithelium, and covered on its outer by a muscular tube and a peritoneal investment. The continuity of the tube with the intestine, always containing septic material; the thin layer of epithelium alone, guarding the tonsil-like tissue from infection ; the narrow lumen of the tube, easily blocked by the swollen lymphoid tissue ; the muscular layer readily excited to severe and painful spasm ; and the thin peritoneal investment, part of the general peritoneal cavity—constitute an anatomical series which may not inaptly be termed a veritable death-trap, when from any local cause, whether in the shape of injury or disease, the protecting epithelium becomes displaced, allowing bacterial invasion of the lymphoid tissue and producing an infective inflammation which is known as "appendicitis" which may be acute, subacute, or chronic, the last-mentioned being the form that usually furnishes the cases of recurrent appendicitis. This infective appendical inflammation may pursue one of several courses, or several courses together, and among these the following may be mentioned :—

(1,) Local adhesive peritonitis by direct irritation of the peritoneal envelope, leading to adhesions of the appendix to neighbouring parts.

(2,) Abscess, either subperitoneal, due to lymphatic infection, or within the tube, due to ulceration of mucous membrane, the lumen of the tube having become blocked. The abscess, once formed, may burrow between the layers of the mesentery of the tube, forming an extra-peritoneal abscess ; or if poured out through the peri-

toneal coat of the appendix it may be limited by the adhesion of neighbouring coils of intestine, or may burst into contiguous viscera if adhesions have occurred, producing cystitis, nephritis, etc., according to its course, or may lead to a chronic septicæmia; or it may rupture into the general peritoneal cavity, producing perforative general peritonitis.

(3,) Inflammation may extend along the lymph channels to the cæcum, producing a true typhlitis or perityphlitis, which may or may not end in suppuration.

(4,) Infective thrombosis of the vessels—if of the single artery, leading to gangrene of the appendix and acute peritonitis; if of the veins, leading to septicæmia or pyæmia, or possibly to abscess of the liver.

(5,) General peritonitis by direct extension without perforation, producing paralysis of bowel and symptoms of acute intestinal obstruction.

(6,) Violent colic, due to the irritation of the muscular coat and its violent contractions to try to force the contents of the tube, whether fæcal or other concretion, or pus or mucus, through the contracted orifice into the cæcum.

(7,) Stricture, due to the healing of an ulcer, and accumulation of mucus in the distal end of the tube, producing periodical attacks of colic.

In the "Lancet," for June 30, 1894, we reported a series of nine cases of *Recurrent Appendicitis* operated on successfully in the quiescent period, each case having had numerous attacks, and we there remarked:—

In such cases there are clearly three courses which may be pursued: (1,) Non-operative, trusting to rest and diet, with opium if required, in order to bring about resolution in the hope that the existing attack may be the last; (2,) Operation on the second or third day of a seizure, as advised by Dr. F. S. Dennis and other American surgeons, who discourage the removal of the appendix between the attacks on the chance that there may be no recurrence; (3,) Operation in the quiescent period, between the seizures.

My practice will show that I decidedly prefer to operate in the quiescent period if opportunity be given to choose the time: (1,) Because the patient is likely to be in the best possible condition; (2,) Because there is less likelihood of there being an extensive collection of inflammatory products in or in the neighbourhood of the appendix, and therefore there will be less danger of soiling

the general peritoneal cavity, and less fear of peritonitis; (3,) An operation in the quiescent period seldom requires drainage, and therefore the wound can be made secure, and there will be less likelihood of hernia following operation; and (4,) The appendix can be dealt with in a more satisfactory manner than when it is acutely inflamed and hidden by greatly distended intestines.

In deciding on the line of treatment, *quâ* medical or surgical, the patient should have matters fully explained to him, the dangers of recurring attacks, with the sufferings and inconveniences, being balanced against the risk of operative interference and the results gained by operation; therefore in all these cases I would urge the co-operation of physician and surgeon, so that, if possible, the opinion given may be free from bias. Can these several risks be estimated? Fitz gives the mortality of perityphlitis medically treated as 11 per cent.; this is probably too high for attacks of recurrent appendicitis, but who is to say that in any case the next seizure may not end in perforation and death? What are the inconveniences? In all the cases related, incapacity for the ordinary pursuits of life and practically chronic invalidism were marked features. What is the likelihood of recurrence! In the cases related there seemed to be every probability of the recurrences being repeated indefinitely, and I should say that if in any case the attacks were repeated two or three times they would not unlikely recur many more times until some complication supervened.

What are the risks of operation in the quiescent period? Here we stand on more certain ground, for published statistics prove the dangers to be very slight in the hands of those accustomed to such operations—I believe not more than 2 or 3 per cent. And, lastly, What are the results which may be looked forward to after recovery from operation? In such cases as have been reported, and in my own now mentioned, the patients have been apparently completely cured.

Although I do not agree with those surgeons who argue that every case of appendicitis should be operated on, I do feel that in recurrent appendicitis operation should be resorted to as soon as it becomes evident that there is a probabilty of the attack being repeated, especially as the operation is one that can be undertaken in the quiescent period with every prospect of immediate and ultimate success.

Appendicitis Obliterans.—Senn[1] describes a pathologically and anatomically well defined form of appendicitis that has hitherto not been separately described. The characters of this morbid condition

which is called "appendicitis obliterans" are described in the following conclusions :—

(1,) Appendicitis obliterans is a comparatively frequent form of relapsing inflammation of the appendix vermiformis.

(2,) It is characterized by progressive obliteration of the lumen of the appendix, by the gradual disappearance of the epithelial lining and glandular tissue, and the production of granulation tissue from the submucous connective tissue which, by transformation into cicatricial tissue, starves out remnants of glandular tissue, and finally results in obliteration.

(3,) The obliterating process manifests a progressive tendency, and may finally result in complete destruction of all glandular tissue and obliteration of the entire lumen.

(4,) The incipient pathological changes occur either in the mucous membrane of the appendix, in the form of simple ulceration, or as an interstitial process following lymphatic infection.

(5,) The most constant symptoms which attend this form of appendicitis are relapsing acute exacerbations of short duration, moderate swelling at the seat of disease, and persistence of tenderness in the region of the appendix during the intermissions.

(6,) The process of obliteration may begin at the distal or proximal end, or at any place between, or it may commence simultaneously, or in succession at different points.

(7,) Obliteration at the proximal side gives rise to retention of septic material, which finds an outlet through the lymphatics, and gives rise to non-suppurative lymphangitis, and lymphadenitis.

(8,) Circumscribed plastic peritonitis is an almost constant concomitant of appendicitis obliterans, and hastens the process of obliteration.

(9,) Complete obliteration of the lumen of the appendix results in a spontaneous and permanent cure.

(10,) In view of the prolonged suffering incident to a spontaneous cure by progressive obliteration, and the possible dangers attending it, a radical operation is indicated, and should be resorted to as soon as a positive diagnosis can be made.

We have lately operated on two cases of this kind in which the cavity of the appendix was completely obliterated at certain parts, and the small tube had to be separated from amidst a mass of adhesion ; but although small, its potency for harm was well illustrated by the frequent repetition of symptoms producing chronic invalidism and by the entire cessation of attack after removal of the offending organ.

The use of Aperients in Appendicitis.—In the "American Journal of Medical Science," Dr. Richardson discusses this subject at length and

remarks, "I believe that cathartics should never be used in the beginning of an attack of appendicitis, and that the use of opium is far more rational if anything must be used."

Palpation of the Vermiform Appendix is said to be always possible by Dr. Edebohls, of New York, who advocates it as a regular procedure in all cases of pelvic and abdominal discomfort. We have found this statement to be accurate in all cases where the appendix is diseased, and then tenderness is usually present; but where there is no disease, or where the cæcum is distended, we believe the appendix can seldom be recognized.

The inch and a half incision and week and a half confinement in appendicitis are being advocated by Dr. R. T. Morriss,[2] who insists on the great frequency of the disease, the unfavourable results of late operation, and the trifling mortality of early operation. For the discovery of the appendix, Dr. Morriss places a pinch of sodic chloride on the exposed cæcum, which at once produces reversed peristalsis; by then following the course of the broad longitudinal ribbon which leads to and ends at the appendix, that structure is readily found.

Auscultation of the abdomen is of great value in differentiating between distension due to accumulation of gas and that from peritonitis, as in the latter case, as pointed out by Richardson, of Boston, there is an inhibition of peristalsis.

McBurney[3] describes a method of opening the abdomen which he says yields a more perfect result than the older methods. His incision is oblique and the fibres of the external oblique are separated, *not* divided, and then retracted. The internal oblique and transversalis are separated in the same way. When the transversalis fascia and peritoneum are divided, four retractors are employed.

Rheumatic Perityphlitis.—Dr. Burney Yeo[4] has pointed out that certain cases of appendicitis may have a rheumatic origin, and may yield to anti-rheumatic remedies. Dr. Haigh[5] has seen several such, and advocates the use of the salicylates in their treatment.

Appendicular Colic.—A term first applied by Talamon to cases of pain in the cæcal region, associated with irritation or inflammation in the appendix, which formed the subject of a paper before the Leeds and West Riding Medical and Chirurgical Society, by Mr. Jessop, who described two cases in which he had removed the appendix with a narrowed proximal and dilated distal lumen. He thought the term appendicular colic applicable to such cases, and advocated the removal of the disease, not only for the relief of pain, but in order that more extensive inflammation might be prevented.

The papers by Dr. Fowler, in the "Annals of Surgery" for 1894, and

the work on the Pathology of the Vermiform Appendix, by Dr. Kelynack (H. K. Lewis), afford much food for thought, and are well worthy of study by those who may have cases of appendicitis to treat.

REFERENCES.—[1] "Journal of the American Med. Assoc."; [2] "Therap. Gaz.," March 15, 1894; [3] "Ann. of Surg.," July, 1894; [4] "Brit. Med. Journal," June 16, 1894; [5] Ibid., June 30, 1894.

ASCITES.

New Sign of Ascites.—Dr. Garciadego recommends the following method as a certain means of diagnosing small effusions in the peritoneal cavity. Placing the patient on his back on an inclined plane of 45°, the index finger, well greased, is introduced into the rectum, in order to examine the posterior peritoneal fold, in men; in women, the posterior vaginal *cul-de-sac* is examined. If any effusion exists in the peritoneal cavity, no matter how small it may be, gravity will cause the liquid to descend to the most dependent parts, and in consequence of the position in which the patient is placed, it will gravitate towards the posterior part of the pelvic portion of the peritoneum. The exploring finger will clearly discover fluctuation, and to make sure that it is produced by a peritoneal effusion it will suffice to change the patient's position, while the surgeon's finger continues in contact with the postero-superior part of the rectum. The liquid will then be observed to shift to the side on which the patient lies in his new position: and fluctuation will immediately disappear, because the fluid which produced it has changed place and it cannot any longer be recognized by the exploring finger. If the patient is again placed in the former position, the fluctuation is at once felt by the examiner's finger, a circumstance which permits the surgeon to make sure, in the most positive and satisfactory way, of the existence of an effusion. Practice has shown the value, certainty, and importance of this diagnostic sign.

REFERENCE.—"Pract.," April, 1894.

ASTHMA.

Einthoven[1] deals exhaustively with the cause and symptoms of asthma nervosum. Three principal theories as to this condition have been advanced: (1,) Disturbances of the lesser circulation, causing mechanical difficulties in the movements of respiration; (2.) Spasm of the diaphragm and other inspiratory muscles; (3.) Spasm of the bronchial muscles. Of these the author accepts the last. In reply to Biermer, who says this theory has no experimental basis, he cites some results of his own. By electrical stimulation of the vagi he produced spasm of the bronchi in a dog, without modifying in the animal either the pressure

of the blood or the action of the heart. A more important objection advanced by Riegel and Germain Sée is found in the most prominent symptom of asthma, the over-distention of the lungs with air, which, they argue, cannot be produced by contraction of the bronchial muscles. In reply Einthoven draws attention to the type of respiration peculiar to sufferers from asthma: the powerful inspiration, the slow and feeble expiration, which necessarily must cause this symptom. The characteristic paroxysms of asthma he ascribes to the spasm of the bronchi impeding the respiration. This produces an excess of CO_2 in the blood, which causes abnormal stimulation of the vagi. This action and reaction are further influenced: (1,) By the reciprocal effects of an accumulation of CO_2 in the central nerve system, and a retardation of the circulation; (2,) By the rapid production of CO_2 in the organism in consequence of the powerful efforts required for the movements of respiration. As therapeutic agents he recommends **Nicotine** and **Atropine.** The latter drug, especially, brought quickly into the circulation by subcutaneous injections of very small doses, affords speedy relief to the sufferer by breaking the circulus vitiosus which causes the paroxysm.

Dr. Ernest B. Sangree,[2] having made a patient comfortable by the use of ½ drop of a 1 per cent. solution of **Nitro-glycerin** every half hour, found that when the remedy was exhausted the attack immediately regained its former severity. If the remedy was continued, the patient could not lie down, and was able to obtain only a few minutes of fitful sleep. Small pieces of ice wrapped in a towel and applied over the course of the pneumo-gastric in the neck was successful within five minutes in relieving the attack.

The following will be found useful in asthma[3]:—

℞ Chloralis		Syrup of Oranges	f℥vj
Potassii Iodidi, āā	℥ss	Water	f℥vj

Sig.—2 to 5 tablespoonfuls a day.

For spasmodic asthma[4]:—

℞ Lobeliæ Pulveris	Theæ Nigræ Pulveris
Stramonii Pulveris	Potasii Nitratis, āā partes æquales

Misce bene et fiat pulvis. A little to be burned and the vapour inhaled.

For bronchitic forms[5] the following formulæ are recommended:—

℞ Potassii Iodidi	℥ij	Sp. Chloroformi	f℥iv
Ammon. Carb.	℥j	Vin. Ipecac.	f℥j
Tinct. Lobeliæ	f℥ij	Infus. Senegæ, q. s. ad	f℥vj

M. A tablespoonful in a wineglassful of water every four hours.

℞ Extracti Stramonii	gr. ⅛	Tincturæ Lobeliæ Æthereæ	♏ v
Potassii Iodidi	gr. v	Aquæ Chloroformi	ad ℥ss
Ammonii Carbonatis	gr. iv		

Misce et fiat mistura. A tablespoonful every four or six hours[6].

REFERENCES.—[1]"Brit. Med. Journ."; [2]"Amer. Journ. of Med. Sciences," March, 1894; [3]"Med. Press," Feb. 21, 1894; [4]"Pract.," Aug., 1894; [5]"Med. Press," Feb. 21, 1894; "Pract.," June, 1894.

Synopsis.—(Vol. 1894, p. 98.) Dr. Thos. J. Mays uses **Strychnine**, beginning with $\frac{1}{30}$ of a grain subcutaneously once a day, gradually increased to $\frac{1}{20}$ or $\frac{1}{10}$ grain, to which **Atropine** $\frac{1}{60}$ to $\frac{1}{40}$ of a grain may be added. The drug may also be given in the following combination: ℞ Phenacet. gr. 64; Quinine Sulph. gr. 32; Ammon. Mur. ʒ 1½; Pulv. Capsici gr. 4; Strych. Sulp. gr. 1⅓, M. ft. capsulas. No. 32. *Sig.*—1 four times a day; or: ℞ Strych. Sulph. gr. 1½, Syr. Acid. Hydriodici, Syr. Hypophosph. āā ʒij M. *Sig.*—1 teaspoonful three times a day. In severe cases **Morphia** or **Nitro-Glycerine** must be added. In the exhaustion stage nitro-glycerine, lobelia and other narcotics are useless; **Rest** is all important and **Constant Nourishment**. **Strychnine** is useful here also. **Massage** is to be used in desperate cases. **Electricity** is serviceable. Also **Rarified Air** and **Calisthenic Exercises** obtained in the pneumatic-cabinet treatment. **Morphia** may be added to the hypodermatic injections of strychnine to procure sleep. Ruel suggests the use of **Ammonium Chloride** to prevent the formation of the spiral formations found in the sputa of asthmatics: ℞ Pot. Iod. ʒij; Tinct. Scill. ʒj; Tinct. Stramonii ʒij; Ext. Glycyrrh. Liq. ʒiij; Sp. Ætheris ʒj; Aq. ad ʒviij, M. et ft. mistura. *Sig.*—1 tablespoonful in a tablespoonful of water every six hours for bronchial asthma. For nasal asthma: ℞ Cocain. Hydrochlor. 1 part; Triturated Camphor 2 parts; Bismuth Subnitratis, 16 parts, M.

ATHEROMA.

Synopsis.—(Vol. 1894, p. 24.) V. Oefele considers that **Nerium Oleander** is indicated in atheroma if diarrhœa or vomiting be not present. It is given in concentrated infusion, the daily dose equalling 1 to 7 grains of the raw drug.

ATROPHY (Muscular).

Allan McLane Hamilton, M.D., New York.

Penrose and Turner presented to the Clinical Society a case of the non-spinal form of idiopathic muscular atrophy, which was interesting because it showed symptoms of three nervous diseases, namely, pseudo-hypertrophic muscular paralysis, idiopathic muscular atrophy, and the condition known in France as the Landouzy-Dejérine disease, the facio-scapulo-humeral type of muscular atrophy. Erb had shown that the whole of these affections were but varieties of muscular dystrophy.

REFERENCE.—"Lancet," Feb. 3, 1894, p. 209.

BERI-BERI.

Allan McLane Hamilton, M.D., New York.

Scheuber states that this is doubtless a pure miasmatic affection developed under certain conditions of high temperature and moisture, and presenting the symptomatology of a multiple neuritis. The largest number of cases occur between the ages of sixteen and twenty-five, and the disease is most prevalent in the months of July and August.

Four types of the disease are described: (1.) An incompletely de-

veloped or rudimentary form ; (2,) An atrophic form ; (3,) A dropsical, or dropsical and atrophic form ; and (4,) An acute pernicious or cardiac form. In many cases the termination of the disease is recovery, but in acute cases, especially where there is some cardiac complication, the reverse is the rule. In the acute pernicious form, which is that in which the cardiac symptoms are those of insufficiency, there is very apt to be anasarca and serous accumulations. In nearly all cases there is weakness of the lower extremities, various disturbances of sensation, and preservation of the cutaneous reflexes.

REFERENCE.—" Med. News," July 7, 1894.

Synopsis.—(Vol. 1894, p. 100.) For the heart paresis and pulmonary congestion and œdema, **Nitro-glycerine** is a useful palliative during the paroxysms of dyspnœa. Simon gives 5 to 10 drops of a 1 % solution repeated in diminished doses every fifteen or thirty minutes. Von Tunzelmann has used hypodermic injections of **Digitalin** for the cardiac paresis.

BLADDER (Surgery of). *E. Hurry Fenwick, F.R.C.S.*

Absorption by the Urinary Bladder.—The conflicting accounts which are published yearly upon the absorptive power of the bladder and urethra continue. Bazey[1] has come to the conclusion that the idea that the bladder is unable to absorb is erroneous. Injections of poisons into the bladder kill animals with as great certainty as if made into the rectum or subcutaneously. Chemical and microbic poisons were used in his experiments. Cocaine, strychnine, and hydrocyanic acid, kill animals in a few minutes ; belladonna, curare, and pilocarpine, produce their effects much more slowly.

Pneumococcus injected into the bladder of six rabbits produced a fatal result in five instances ; three died in five to six days with pleural and peritoneal exudations and without renal lesions. Maceration of gangrenous muscle by the septic vibrio, after being passed through a Chamberland's filter, was injected into the bladder of a rabbit, and the animal died in twenty days. Water appeared to be absorbed by the bladder also. Absorption by the urethra appeared to be very active, while that by the ureter was less so ; but when the toxic fluid reaches the level of the calices death depended on the dose.

Analgesic Injections.—Vigneun[2] finds that intravesical injection of **Antipyrin** is an excellent remedy for pain in cystitis. The bladder should not be in a condition of over-distension. A solution of 1 in 25 of antipyrin is used, and 10 to 20 grammes of it are thrown into the bladder and left in for ten minutes.

Injection for Cystitis.—G. Colosanti[3] advises washing out the viscus with ½ to 1 per cent. solution of **Ichthyol** in catarrhal affections of

the bladder. Pain is relieved, micro-organisms are destroyed, and ammoniacal fermentation prevented by this means.

Vesical Atony.—Rusconi[4] records a case of vesical paralysis following typhoid, accompanied by general muscular weakness and neurasthenia, all of which symptoms disappeared after five injections of **Testicular Juice.**

Rupture of the Urinary Bladder.—Sieur[5] shows that the mortality from traumatic rupture of the bladder has during the last fifteen years been reduced from 90 to 54 per cent. This decrease is due to *early* operative interference. The two forms of rupture—the intra-peritoneal and the extra-peritoneal have a different death-rate. Thus, of thirty-four intra-peritoneal ruptures fourteen recovered and twenty died; of eighteen extra-peritoneal ruptures ten recovered and eight died. Co-existing fracture of the pelvis adds greatly to the gravity of the case.

Sieur regards the following symptoms as the most important signs of intra-peritoneal rupture of the bladder. A peculiar pain felt at the time of the injury, chilling of the surface of the body which persists for some time, an urgent desire to urinate which the patient cannot satisfy, the absence of any vesical swelling above the pubes, the absence of urine in the bladder or its presence in a very small quantity.

In cases in which there is doubt as to the seat of rupture the median suprapubic incision should be used, the peritoneum only opened after the cavity of Retzius has been explored. Suture should, it is submitted, be attempted in every case, if possible. Sieur concludes that surgical intervention should be practised in every case of vesical rupture, whatever the form of injury may be, unless there has been either very intense nervous shock, or the patient has been reduced to a hopeless state of urinary infiltration and general poisoning.

Vesical Fistulæ as a Complication of Pelvic Suppuration.—Dr. Cullingworth,[6] in an address on Pelvis Abscess, mentioned that it was commonly stated that cellulitic abscesses frequently burst into the rectum, vagina, and bladder. This assertion rested on slender foundations. Many of the cases quoted in support of the statement belong to an era when little was known of the pathology of pelvic inflammations, and on carefully reading them through in the light of our present knowledge it was easy to see that at least a considerable number reported as cellulitic abscesses were really cases of intra-peritoneal suppuration, originating in suppurative disease either of the ovaries or tubes. He gave the following interesting case as one in point: The patient, a woman aged thirty-two, had been married nine years, but had never been pregnant. Six months before her admission she had, what was supposed to be, an attack of influenza.

She kept her bed for a fortnight, and then went into the country. Whilst there she noticed some thick yellow matter in her urine, which continued in amount to half a fluid ounce. She had suffered pain from time to time in the right iliac region, but this had never been very severe. On examination the uterus was found of normal length, the canal directed to the left. A large, hard, uneven, roughly globular mass was felt on the right side of the pelvis depressing the vaginal roof and extending upwards to the level of the anterior superior iliac spine. Laparotomy was performed, adhesions separated, and an inflamed right Fallopian tube and a suppurating cystic ovary, three inches in diameter, were removed. On the under surface of the ovary was a small opening from which blood-stained purulent fluid oozed on pressure, and which probably represented the aperture of communication with the bladder. No attempt was made to close the opening in the bladder. The urine, subsequently withdrawn by catheter, contained blood and pus. The catheter was used every two hours at first. There continued a little suppuration from the lower angle of the wound for six months when the sinus finally closed.

In a case lately sent to Mr. Hurry Fenwick by Dr. Valentine Rees, of Brecon, the opening of a pelvic abscess into the bladder was seen by means of the cystoscope to be so small as only to admit a fine probe, and abdominal section revealed that the source of the pus was beneath the peritoneum. An incision was made through the vagina on to the floor of the abscess and the patient recovered.

Tuberculosis of Bladder.—Koeing[7] says the positive diagnosis of tuberculosis of the bladder rests upon two conditions—the discovery of the tubercle bacillus, and clinical experiment. The first condition so often fails that he has adopted the second for positive diagnosis. This consists in the injection of some of the urine into the eye, the joint, and the pleural or abdominal cavity of a rabbit. He employed this method before the discovery of the tubercle bacillus, and even yet he resorts to it as the surest and easiest diagnostic help in those cases in which the identification of the germ has not been satisfactorily made. With these views the collator is in entire accord. Some urines from patients who are on clinical grounds diagnosed to be suffering from tuberculosis are very pale and nearly clear; so clear in fact that doubt is often cast upon the correctness of the opinion. In one or two cases in which nearly clear urine was being passed, a fresh sample was pronounced by the 'senior' in the laboratory to have induced tuberculosis in animals.

Tubercle of Bladder.—Bardenheuer[8] has dissected away the centre mucous membrane of the bladder in three instances for tuberculosis

of that organ. This was necessarily followed by contraction of the bladder and incontinence of urine. We are not informed of the ultimate fate of these patients.

Tumours of Bladder.—Campbell,[9] of Belfast, advocates the following procedure, which he finds facilitates the removal of large tumours of the female bladder :—

The vesico-vaginal septum should be incised to a sufficient degree to admit the left forefinger, which can then be used to guide the forceps working through the urethra. In this way any tumour suitable for removal can be quickly, safely, and thoroughly dealt with.

Prevalence of Stone in Australia.—Dr. J. B. Nash,[10] writing on the Prevalence and Distribution of Vesical Calculus in Australia, concludes that there is an area in Victoria, in the neighbourhood of Sandhurst, Castlemaine, and Ballarat, in which stone is especially frequent. The mortality from suprapubic lithotomy, according to Dr. Nash's tables, is at least 5 per cent. in children, and 18·18 per cent. in adults.

Stone of Bladder.—Dr. Keen[11] suggests that in every case of renal colic that the bladder should be systematically, and as a routine practice, washed out with a Bigelow evacuator, if the stone is not discharged within a few days.

Gilbert Barling[12] writes a valuable article on the comparative safety of suprapubic lithotomy, of lateral lithotomy, and of litholapaxy in young males, and shows by statistics gathered from six London and six provincial hospitals that the mortality after the suprapubic is greater than after the lateral operation—17·4 per cent. as against 5 per cent. Litholapaxy is shown to be barely 5 per cent. It is therefore clear, says Mr. Barling, that the operation of election in young males is either lateral lithotomy or litholapaxy.

Suprapubic Sounding and Cystoscopy.—Mr. Hurry Fenwick[13] drew attention to the difficulties in sounding for stone in certain cases of much enlarged or in irregularly enlarged prostate, for calculi were sometimes so deeply fixed behind and below an upraised median lobe or collar that the sound introduced *per urethram* could not reach them however much rotated it was, or however forcibly it was thrust toward the base over the lobe. Moreover, harmful pressure was often exercised in this manœuvre upon the prostate, and cystopyelitis and hæmorrhage were apt to ensue. He suggested that whenever the prostate was very large, or wherever it was difficult to traverse, or if it bled easily, that an aspirator trocar and cannula should be thrust suprapubically into the full, *cleansed* bladder, the trocar replaced by a loosely-fitting blunt pilot, and the *post*-prostatic pouch and bladder base carefully prodded with this instrument to ascertain the absence

or the presence of the stone without incurring those risks which are consequent upon urethral sounding.

If it had been determined to drain the bladder suprapubically, a larger trocar and cannula could be employed, and through the latter a straight electric cystoscope, which he had had made, could be introduced into the washed-out bladder, and the interior examined. Mr. Fenwick advised this latter procedure in cases of much enlarged prostate in which a suspicion of benign growth existed ; for in these cases the ordinary cystoscope could not be used. If a stone or benign growth was discovered, a director could be passed through the cannula, the latter withdrawn over the director, and the bladder opened by a limited incision on the director. The disease could then be dealt with, and the bladder drained. He submitted that this method of sounding and cystoscoping would save exploratory suprapubic cystotomy, which was a severe procedure in old age, and one which should not be undertaken lightly.

Statistics of Stone.—Surgeon-Major Freyer [14] publishes the results of a series of eight hundred and fifty-two operations for stone in the bladder by all methods, namely, two hundred and forty-five by perineal lithotomy, six by suprapubic lithotomy, three by rapid dilatation of the urethra in females, and five hundred and ninety-eight by litholapaxy, or "lithotrity at one sitting," as the operation is sometimes called. These latter five hundred and ninety-eight cases removed by Bigelow's method demonstrate what a vast influence the modern operation has had in ameliorating the sufferings and diminishing the mortality attendant on stone in the bladder.

Freyer has abandoned the use of all but fully fenestrated lithotrites. He considers the use of any other kind unnecessary, and almost unjustifiable, considering the danger that exists of *débris* getting impacted in the jaws of non-fenestrated instruments—an accident which cannot occur with fully fenestrated ones when properly used. The use of the lithotrite in the modern operation is to crush, never to fish out, the fragments—a *rôle* to which it was frequently consigned in the old operation of lithotrity.

Various points are touched upon of extreme importance :—

Statistics of Recurrence.—"These five hundred and ninety-eight litholapaxies occurred in five hundred and eighty-seven different individuals, the disease having recurred once in nine instances, and twice in one instance. In three other cases litholapaxy had previously been performed by other surgeons. In all these cases long intervals had elapsed between the first operation and the recurrence of the symptoms of stone ; and, after careful inquiry, I am bound to say that neither in

the cases of those previously operated on by myself nor in those operated on by others did the recurrence seem to be due to a fragment having been left behind at the first operation. They were all simple cases of recurrence of stone from constitutional causes. In eight other instances the patients had previously undergone lithotomy, three of them twice. Three of these lithotomy operations had been performed by myself. I attribute the rarity of recurrence of stone after litholapaxy in my practice to the extreme care exercised by me in seeing that the last fragments of calculus are removed. So far as my experience goes, recurrence of stone is as frequent after lithotomy as after litholapaxy."

Duration of Operation.—"The length of time occupied by the operation ranged from a couple of minutes to two hours. It will vary, of course, with the size and consistence of the stone, the capacity of the urethra, the facility with which the instruments can be introduced, and the experience and dexterity of the operator. I am now in the habit of crushing as much of the stone as possible before withdrawing the lithotrite, so that in most cases of stone of ordinary size only one introduction of this instrument is necessary. The repeated introductions of instruments should, I think, be avoided as much as possible. Rapidity of execution is a quality which comes with practice; and there is no doubt that, all undue haste and roughness of manipulation being avoided, it is desirable to complete the operation as rapidly as possible, particularly when the patient is old and worn by the disease."

Anæsthetics.—"The patients were, as a rule, anæsthetised during the operation. During the last three or four years I have, however, been performing the operation without an anæsthetic in an increasing number of suitable cases. With a capacious urethra in an adult I should not hesitate to attack a stone of about an ounce in weight without the aid of an anæsthetic, or with local anæsthesia by cocaine, in a case in which the internal administration of an anæsthetic was undesirable or strongly objected to by the patient."

Operation at a Single Sitting.—"There is no point on which I have laid more stress in my published writings on this subject than the absolute necessity of completing the operation at a single sitting, no matter how large the stone may be. This is the essential feature of the operation. Amongst my five hundred and ninety-eight operations, in eight instances only was it necessary to have recourse to a second sitting, and in two cases only designedly. One was that of a boy aged fifteen, from whom I removed successfully a stone (or rather two stones), the *débris* of which weighed 3½ ounces, the details of which

have been published ; the other, that of a man, aged forty-five, with a large calculus, 3 ounces in weight. After removing 2 ounces of *débris* I had to postpone finishing the operation to a second sitting, owing to the extreme exhaustion of the patient. In this case a fatal result ensued, from pyæmia. In the remaining six instances a fragment was undesignedly left behind at the first sitting, revealing its presence next day by the pain, stoppage of urine, and other symptoms, when it was removed at a second sitting."

Encysted Calculus.—"Hitherto such cases have, by general consensus of opinion, been relegated to suprapubic lithotomy, and I am unaware of any published writings in which dealing with them by litholapaxy has been advocated. When the opening into the sac in which the stone lies is narrow, or when the stone almost fills the pouch, it will be necessary to have recourse to cystotomy, but, so far as my experience goes, such cases are rare, the stone as a rule lying loosely in a wide-mouthed pouch. For several years I have now been in the habit of dealing with encysted calculi mostly by litholapaxy, withdrawing the stone into the general cavity of the bladder when possible and crushing it there ; otherwise crushing it in the sac."

Litholapaxy in Male Children.—"As already mentioned, there were one hundred and fifty-eight male children, or lads below the age of sixteen, operated on by litholapaxy. It was not till 1886, four years after I had commenced to perform litholapaxy in adult males, that I performed the operation in children. Though an ardent advocate of the modern operation in the adult, I, like most other surgeons, at first opposed its extension to the case of male children, basing my opposition on the undeveloped condition of the genital organs, the bladder being small, the urethra narrow, and the mucous membrane sensitive and liable to laceration. On the other hand, lithotomy in the child had always been a comparatively successful operation ; and, so far as my own practice goes, I had no cause in this respect to abandon this operation in favour of litholapaxy, having had the good fortune to have now performed one hundred and ninety-seven lithotomies in male children with only one death. In fact, it was only after having had a run of one hundred and ninety-one successful lithotomies in children, that a fatal case occurred. In spite of this, however, I was so much impressed by the results announced by Keegan in two very able papers published in the "Indian Medical Gazette" in 1885, that I at once ordered the necessary instruments, and decided on giving the operation a trial. Since that time I have performed litholapaxy in male children one hundred and fifty-eight times, with two deaths. My first one hundred and nineteen cases were all successful, and I had then

the misfortune of losing two cases consecutively. All our foregone theoretical objections to this operation in case of male children have vanished into thin air when pitted against the stern reality of accomplished facts. Notwithstanding the great success I have had with lithotomy, I have now practically abandoned the operation in favour of litholapaxy, owing to the two great advantages that the latter possesses—rapidity of cure and avoidance of a cutting operation. To Keegan is due the honour of having, in the face of strong opposition, shown that litholapaxy in male children is a feasible and safe operation."

Mortality.—"Amongst these five hundred and ninety-eight litholapaxy cases there were eleven deaths; namely, nine amongst four hundred and twenty-six operations on adults, and two amongst one hundred and sixty-four on children. These fatal cases, with the exception of the last two, have been fully reported in the medical journals from time to time; and the details of the remaining two will be given in due course, when I publish my next series of stone operations. The causes of death were: exhaustion five (with pneumonia superadded in one); peritonitis, two; pyæmia, one; acute nephritis, one; and acute cystitis, two. All these were in bad health when coming under operation, except one; and this patient had had retention of urine for thirty-six hours, with the calculus blocking the prostatic urethra. The kidneys were diseased in several of the cases, particularly in one, from whom I removed 3¼ ounces of oxalate of lime stone, and in the case which died from acute nephritis. In this latter I found at the necropsy two calculi in the right kidney, weighing 2 drachms. One patient was ninety years of age. One, a child of thirteen years, who died of cystitis, had been roughly sounded a week before coming under my care, since which time he had been in great agony, so that probably the bladder had been injured during the sounding."

Aëro-cystoscopy.—Howard Kelly[15] has published an article on "The direct examination of the female bladder with elevated pelvis. The catheterization of the ureters under direct inspection, with and without elevation of the pelvis."

The main steps of the procedure he recommends consist: (1,) In emptying the bladder with a catheter; (2,) In elevating the patient's hips from eight to twelve inches, so that the residual urine will run up to the apex; (3,) The weight of the abdominal viscera being removed the bladder is distended with air; (4.) In the gradual dilatation of the urethra; (5,) In the employment of large, straight, open endoscopes; and (6,) In the use of a strong light from an Argand burner or electric

lamp held near the pubes, and reflected into the bladder by a head mirror. The graduated dilators are passed until sufficient calibre has been obtained. Kelly says many take No. 16. Nos. 12 and 14 pass easily in most cases. Suppose a No. 12 dilator passes, then introduce the speculum of the same size and remove the dilator. Thus by means of a simple speculum and proper posture all parts of the air-distended bladder are rendered visible. To inspect the upper and anterior zones the patient is placed in the knee-chest position. Applications may be made to all parts of the bladder and urethra. Small quantities of urine are removed by pledgets of cotton held in delicate mouse-toothed forceps, and applications are made with a cotton-wound applicator. The ureteral openings are seen as little slits in the mucous membrane, and, if watched, urine may be seen issuing from them. A probe with a long handle bent at an obtuse angle is of use in verifying the position of the orifices. The ureters are catheterized with Kelly's catheter, the patient in position with hips raised, or flat on the table.

Dr. W. L. Burrage [16] speaks highly of this method.

REFERENCES.—[1] "Bull. Gén. de Thérap.," Feb. 8, 1894 (Epit. "Brit. Med. Journ.," p. 48, 1894); [2] "Concours Med.," Aug. 11, 1894; [3] "Rif. Med.," Jan. 27, 1894 (Epit. "Brit. Med. Journ.," p. 44, 1894); [4] "Gazz. Medica. Lombardi," June 29, 1893; [5] "Rev. de Chir.," March, 1894; [6] "Brit. Med. Journ." ii., p. 81, Nov. 4, 1893; [7] "Lehrbuch. der Specielle Chirurgie" ("Annals of Surg.," July, 1894); [8] "Centralblatt. für Gynäk." No. 14, 1894; [9] "Brit. Med. Journ.," p. 127, pt. i, 1894; [10] "Australasian Med. Gaz.," 1893; [11] "Annals of Surgery," vol. xix., p. 691; [12] "Brit. Med. Journ.," p. 959, pt. i, May 5, 1894; Ibid., p. 860, pt. i, 1894; [14] Ibid., June 16, 1894, p. 1294; [15] "Amer. Journ. of Obstetrics," Jan., 1894; [16] "Boston Med. and Surg. Journ.," July 26, 1894.

Synopsis.—(Vol. 1894, p. 107.) Dr. Traill Green gives a 10-grain dose of **Phenacetin** at bed-time for senile vesical irritation. Abrasion and fissuring of the mucous membrane at the neck of the female bladder, accompanied by frequent micturition and tenesmus are met by regulating the diet and administering **Alkaline Diuretics**, and the cautious use of **Salol, Boric Acid** and **Oil of Sandal-wood**, the first two in 5-grain doses four times a day, sandal-wood in 10 to 20 ♏ doses one hour after meals. For violent tenesmus, instillation of a 4 % solution of **Cocaine**; dilatation of urethra and application of **Nitrate of Silver** solution, 20 to 60 grains to the ounce through a speculum; daily irrigation with **Potassium Permanganate Solution** (1 to 6,000), **Zinc Permanganate** in the same strength, or **Mercury Bichloride** (1 to 10,000). **Sulphate of Copper** (10 to 20 %) solution, or **Carbolic Acid** and **Iodine**, equal parts of each, are sometimes better than silver nitrate. Croom protests against the use of opiates in chronic cystitis in the female. Antiseptic irrigation with **Boric Acid**, or a warm solution of **Corrosive Sublimate**, 1 in 3,000 or 4,000 of water, using it for at least half an hour and repeating three times a day; depletion by means

of Leeches; rapid Dilatation of the urethra with Simon's dilators; Kolpocystotomy by the galvano-cautery or scissors. Harrison employs Ergot combined with Cantharides and Nux Vomica for atony of the bladder. Brunton advocates Nux Vomica for imperfect evacuation, and Belladonna for incontinence. If belladonna fails, Cantharides, or the two may be combined. For early cystitis, Otis finds an injection of Silver Nitrate relieve pain and frequent micturition. In sub-acute cases he injects mild solutions of the same. In senile cystitis he uses injections of Salicylic Acid. Guyon employs Sublimate Solution, 1 to 5,000, in the various forms of cystitis. Friedlander uses the liquid extract of Pichi-pichi in doses of 1 teaspoonful thrice daily for gonorrhœa, nervous irritability of the bladder, and prostatitis (p. 32).

BOILS.

Synopsis.—(Vol. 1894, p. 11 & 123.) Asaprol 30 to 60 grs. internally as an intestinal antiseptic; also in solution 5%, or ointment 1 to 3. Chloral Solution, ℥iv—℥j; constantly applied to boils.

BREAST (Diseases of).

Galactophoritis.—Boissard[1] distinguishes galactophoritis—inflammation of the mammary ducts and acini—from lymphangitis, which attacks the connective tissue around the gland. The two forms are often mixed, and some of the worst cases of fistulous tracks and frequent repetitions of acute inflammation are the result. Uncomplicated galactophoritis may arise from a very slight abrasion near the orifice of a duct, or it is possible that it may follow the entrance of streptococci or staphylococci into a healthy duct. The disease causes little pain, slight feverishness, but often no rigor; but free pus issues from the nipple. Milk containing pus, as compared with pure milk, is of a grayer or greener hue, and is not so quickly absorbed by wool kept against the nipple. It does not freely trickle from the nipple, but tends to clot around the part, being less fluid than good milk. The child invariably suffers; he rapidly loses weight, and diarrhœa with green stools follows. Death is almost certain. Boissard insists on immediate cessation of lactation from the affected breast, or altogether when both glands are involved. He recommends that (as his method causes pain) the patient should be put under chloroform, and pressure applied to the breast till every drop of pus is squeezed out. The gland is pressed from circumference to centre. When no more of the pus-charged milk escapes, the nipple and breast must be freely pulverised for half an hour with a solution of **Sublimate** or **Naphthol.** Then a compress must be applied, and kept on till the next manipulations. Only three or four applications of this method are needed, and the patient gets well within a week. On the other hand, any mere palliative treatment will certainly kill the child and place the mother in great danger of suppuration of the breast.

Verneuil[2] advocates **Compression** of the breast, not only in cases of inflammation, but also in cystic tumour. He has devised very light stays, made of perforated leather, and laced behind. The pressure is easier to apply, more uniform, and more constant than when bandages are used. The patient herself places layers of wool, gradually increased in thickness, between the breast and the apparatus. Verneuil insists that operation is rarely needed in cystic disease of the breasts. He has treated by **Alkalies, Arsenic**, and compression two patients who had undergone amputation of one breast, and asked him to remove its fellow. In both cases the remaining breast was cured. He also cured by compression a bad case of hypertrophy of the breasts in a girl of eighteen, where amputation had been proposed.

Cracked Nipples[3].—The direct relation of mammary abscess occurring during the period of suckling and excoriations of the nipple is now fully admitted. Many mothers object to suckling their infants on account of the dread of this complication. Artificial feeding, with its frequent failures, is then resorted to, and the child suffers. Antiseptic washing of the nipples has greatly diminished the frequency of abscess of the breast, but cracked nipples continue to be of common occurrence. For the last ten years Professor Pinard has been in the habit of advising nurses as a matter of routine to keep the nipples covered with a compress saturated with a solution of **Boric Acid.** This precaution has had the effect of markedly diminishing the frequency of lymphangitis, but instances of an increase of temperature in young mothers, due to microbian infection of the nipples, are still numerous.

M. Lepage strongly recommends that the nipples should be regularly washed with the following solution : **Red Iodide of Mercury,** 10 to 20 centigrammes (2 to 4 grains) ; **Spirit of Wine,** 50 grammes (1½ ounces); **Glycerin,** 500 grammes (1 pint) ; **Distilled Water,** 450 grammes (1 pint). If after using this for a few days, the ulceration disappears, substitute a solution of boric acid. Any crack that may develop is covered with tarlatan, moistened with the mercuric solution.

The following figures appear to confirm M. Lepage's good opinion of the comparative value of his method. In three hundred and thirty-one cases of lying-in women whose breasts were treated by the Pinard method there was an increase of temperature in sixty-seven, the corresponding figures in M. Lepage's cases being twenty-three out of four hundred and forty. Moreover, the healing of the cracks is said to be expedited and the pain greatly diminished by the mercurial treatment.

REFERENCES.—[1] "Brit. Med. Journ." ; [2] Ibid. ; [3] "New York Med. Journ.," March 17, 1894 ; and "Lancet."

BREAST (Fissured Nipples).

Synopsis.—(Vol. 1894, p. 131.) Ichthyol-lanolin Salve, 10 %. Cocaine Solution, 5 or 10 %, is a useful palliative measure. For unhealthy fissures, cauterisation with Lunar Caustic, or Curetting after applying cocaine, the latter measure being followed by application of Ammoniated Mercury Ointment, Balsam of Peru, Aristol, or other antiseptics. A deep seated ulcer may require one or more fine sutures, combined with firm breast compression and rest for thirty-six hours. Bichloride Wash and Carbolic Solution are severely irritant, however weak, and are contra-indicated. Creolin or Thiersch Solution, 1 %, may be used as antiseptics. Oehren advises: ℞ Ichthyol 4·0, Lanolini et Glycerini āā 5·0, Olei Olivari 1·0, M. Marx discountenances massage or rubbing, if breast is inflamed. The arm is tied up to secure rest, and locally Iced Lead Water is constantly used. Internally Potassium Iodide, 3 grs., is given once only and followed by hourly doses of Sal Rochelle, ʒj, until watery evacuations result. Allen advocates painting nipples frequently with White of Egg. An anti-galactagogue application is the following: ℞ Camphor 1 part, Essent. Terebinth. 6 parts, M. *Sig.*—Apply to the breast.

BREAST (Paget's Disease).

Synopsis.—(Vol. 1894, p. 132.) Gamberini and Maroni use a 10 % solution of Sodium Ethylate. Elliot obtained good results from Fuchsin, ℞ Fuchsin Pur. gr. ijss, Lanoline ʒj, Aq. Rosæ ʒvij, M.

BRIGHT'S DISEASE.

Synopsis.—(Vol. 1894. pp. 13 & 137.) Millard places cases on full doses of Potassium Iodide, also large doses of Fowler's Solution with Corrosive Sublimate; in other cases he uses the Protiodide and Biniodide of Mercury, Ergotinine, Caffeine, Strophanthus, Sparteine, Arsenic and various Iron Salts. He believes Nitro-glycerine and Strontium to be of much value, and where uric acid exists in excess he neutralizes it by means of Vichy, Vals and also Piperazin-water with Phenocol. He sends his patients to Evian, Vichy or Royat, and if hepatic functions are greatly deranged to Carlsbad, Marienbad or Vichy. Huchard employs Digitalin in large doses, avoiding bad effects by a preliminary use of milk diet with absolute rest for a few days, then giving a purge, and on the following morning 50 drops of a solution of crystallised Digitalin (1 to 1,000) given once only and followed by ingestion of 1 milligramme of crystallised digitalin. After an interval of from six to fifteen days these measures are repeated. Liégeois associates Tannin with Sodium Benzoate for Bright's disease: ℞ Sodii Benzoat., Tannin āā ʒjss, Ext. Gentian. q.s., M. *Sig.*—Divide into 100 pills—6 daily. Lancereaux advises Cantharides Tincture in epithelial nephritis, beginning with 6 drops daily, increasing to 10 or 12. The following formula may be used in chronic cases with heart failure: ℞ Tinc. Digitalis ♏ x, Liq. Trinitrini ♏j to ij, Aq. Chloroformi ad ʒss, M. *Sig.*—Thrice daily.

BRONCHIECTASIS.

Synopsis.—(Vol. 1894, p. 139.) ℞ Menthol 10 parts, Guaiacol 2 parts, Olive Oil 88 parts. *Sig.*—ʒj to be injected into the trachea twice a day.

BRONCHITIS.

In the treatment of bronchitis,[1] rest is required in a room of moderate temperature, **Hot Drinks** are to be given with small doses of **Syrup of Tolu** and **Mild Alcoholic Stimulation**. In addition,

every two or three hours, two teaspoonfuls of the following mixture may be used :—

℞	Tincture of Aconite	gtt. xxx	Cherry-laurel water	℥iv
	Syrup of Narceine	℥j	Peppermint water	℥iij

At the same time it is well to paint the chest about the area of the episternal notch with **Tincture of Iodine.**

In the treatment of acute bronchitis in the early stages, when there is hyperæmia and fever with cough without expectoration, first rest in bed with sweating, the administration of hot drinks which may contain alcoholic stimulants, and the application over the chest of mild counter-irritants. For the stage in which expectoration is just beginning and fever is still present, **Kermes Mineral,** grains 7, and **Syrup,** 4 ounces, a teaspoonful every two or three hours. At night, for the relief of cough, small doses of **Chloral** and **Morphine** in simple syrup, which are placed in milk at the moment of taking, may be administered. For the treatment of chronic bronchitis it is well to employ a teaspoonful of **Cod-liver Oil** with **Creasote,** and to administer after each meal a mixture composed of :—

℞	Arseniate of Sodium	gr. j	Water	℥viij
	Iodide of Sodium	℥ij		

A tablespoonful three times a day.

Or,

℞	Terpine, Eucalyptol	āā gr. iij

To be placed in a capsule and taken three times a day.

From a hygienic point of view, the patient suffering from chronic bronchitis should sponge the body every morning with warm water and alcohol, and afterwards use vigorous friction of the skin. He should abstain from tobacco. Should the chronic bronchitis be fœtid, it is wise to use every two hours the following solution by inhalation :—

℞	Eucalyptol	℥i	Water	℥vj
	Alcohol (90%)	℥iij		

Place this in an inhaler and draw in the air impregnated with the vapour of the medicament. At the same time the following pill may be administered :—

℞	Creasote	Iodoform	āā gr. j
	Terpine		

Take this pill three times a day.

Dr. Henri Huchard[2] divides cases of infectious bronchitis into three classes : (1,) The infection takes place from contagion, that is, by direct contact of microbes already virulent ; then isolation is necessary ; (2,) The infection takes place by exaltation of the virulence of microbes pre-existing in the upper air-passages. Here it is

necessary to attack early and energetically the fermentations of the mouth, which so frequently exalt the virulence of the streptococcus; for example, frequent washings of the mouth with solutions of **Boric Acid, Carbolic Acid**, or **Resorcin**; (3.) In the bronchi the microbes of suppuration or putrefaction exalt the virulence of the streptococcus. Here it is necessary to obtain bronchial antisepsis by means of **Creasote, Eucalyptol, Camphorated Guaiacol** (guaiacol, 5; camphor, 20; sterilized oil, 100); the creasote in oil (1 in 15), and the camphorated guaiacol are used subcutaneously. If the infection has done its work, with the camphorated injections those of **Ether** or **Caffeine** should be used in addition.

In the catarrhal affections of influenza, in cases of ordinary bronchitis, and in cases of broncho-pneumonia due to exposure, especially when there is an associated pleuritis, Dr. Solis-Cohen[3] combines the following:—

℞ Phenol Salicylate (or Cinchonidine Salicyl.) grs. 3—5 | Terpin Hydrate, grs. 3—5 | Codeine Sulphate, gr. $\frac{1}{12}$—$\frac{1}{8}$

Mix. Dispense in capsule. Dose: 1 capsule with water every two to four hours.

This, or a similar prescription, is likewise beneficial in the "colds," bronchitic, pneumonic, and pleuritic, that often retard recovery or cause "set-backs" in cases of pulmonary tuberculosis improving, or apparently well under hygienic and other appropriate treatment. In simple pleurisies and in rheumatic pleurisies the terpin hydrate may be omitted.

A mild saline expectorant in bronchial catarrh[4]:—

℞ Sodii Chloridi gr. iv | Spiritûs Chloroformi ♏ v
Sodii Bicarbonatis gr. xij | Aquæ Camphoræ ad ℥j

Misce et fiat mistura. Two tablespoonfuls to be taken four times daily.

REFERENCES.—[1] "Therap. Gazette," May, 1894; [2] "American Journal of Med. Science," May, 1894; [3] "Med. Record," Oct. 21, 1893; [4] "Practitioner," March, 1894.

Synopsis.—(Vol. 1894, pp. 12, 20, 24 & 139.) ℞ Extracti Cocillanæ Fluid, Ext. Lippiæ Mexicanæ, āā ℥ss. M. *Sig.*—30 drops in a wineglassful of water every four to six hours (Wilcox). Decrease the dose if vomiting ensues. Murrell employs **Terpene Hydrate Solution**, containing 5 grs. to ℥ss made up with **Simple Elixir**, and flavoured either with **Tincture of Virginian Prune** and **Syrup of Tar**, or with **Aq. Laurocerasi**. ℞ Purified Tar, gr. 15; Dover's Powder, gr. 22; Powdered Benzoin, q. s. to make 20 pills. *Sig.*—1 to 4 daily in chronic bronchitis with inflammation (Ferrand); a purgative is given twice a week. **Ammonia** is used as counter irritant to the chest, and the fumes of **Muriate of Ammonia** may be inhaled. ℞ Ac. Hydrocyan. dil. ℥jss; Morph. Acet. gr. jss, Mucil. Acac. ℥j; Syr. Pruni Virg. ℥iv; Aq. ad ℥vj, M. A teaspoonful to be sipped every four or six hours for irritable cough: ℞ Acet. Canthar. ℥ij; Spt

Camph. ad ℥j., M. ft. lin. To be applied to the chest at bed-time. ℞ Ammon. Carb. gr. 4; Tinc. Scill. ♏ xx; Sp. Ætheris ♏ x; Tinct. Nuc. Vom. ♏ x; Infus. Serpentariæ ad ℥j, M. *Sig.*—2 tablespoonfuls every six hours. Spiegeberg found results from 6 doses of 7½ grs. each of **Analgen**, given during twelve hours for bronchial asthma (p. 9).

BRONCHORRHŒA.

℞ Copaibæ	℥iij	Mucilaginis Acaciæ	℥vij
Tincturæ Chloroformi Compositæ	♏xx	Liquoris Potassæ	℥j
		Aquæ Cinnamomi ad	℥viij

Misce et fiat mistura. An eight part to be taken three times daily.

REFERENCE.—"Practitioner," June, 1894.

BUBO.

After condemning all methods which aim at aborting the inflammatory action, *e.g.*, painting with iodine, application of mercurials, lead and opium, aconite and belladonna, cold, heat, blisters, leeches, pressure, etc., Sherrill[1] raises the question why any attempt should be made to abort a bubo when we are unable to distinguish a simple from a virulent inflammation until suppuration and rupture occur?

Instead of wasting time trying to abort the inflammation, and after watching the case for two or three days, if the patient still suffers much pain and inconvenience, he resorts to the immediate removal of all the inflamed glands. A free incision over the inflamed tissue down to the glandular structure will reveal the inflamed gland lying loosely in its capsule. Very little difficulty will be experienced in its removal. The hæmorrhage should be controlled and the wound irrigated with hot water containing some antiseptic; if preferred, dried and sprinkled with **Iodoform**; then packed with iodoform gauze and covered with a compress fixed by a spica bandage. The dressing should be changed on the second day, and at longer intervals after that time.

The advantages afforded by this method are:—

(1,) A complete and rapid recovery—at the very longest in two weeks.

(2,) Relief of the patient from a number of weeks' suffering and inconvenience, as it is possible for him to be out in three days, and the pain is instantly relieved.

(3,) The almost certain prevention of a virulent sore, and this of necessity excludes the possibility of the wound being attacked by phagedæna.

(4,) The absence of danger or difficulty in carrying out the treatment.

Noble[2] reported to the Vienna Dermatological Society the results of his investigations into the method of treating venereal lymphadenitis proposed by Lang.

The treatment pursued is as follows: When a case was presented in which abscess-formation had taken place, this was punctured with the point of a bistoury and the contents evacuated by moderate pressure. The remaining cavity was washed out with a 1 per cent. solution of **Nitrate of Silver** driven in with some pressure. This solution was evacuated through the puncture and pressure bandages applied. In very large abscesses two puncture-points were made, more efficient drainage being thus secured.

This treatment of puncture, evacuation, and injection was continued two or three days, until there was no further secretion. This usually requires but two injections At first, after treatment there is a thick chocolate-coloured exudate; finally only blood-stained serum escapes on puncture, and this, if it persistently accumulates, may often be left to absorption. When a case was presented in which abscess-formation was not complete, showing uncertain fluctuation, the injections of nitrate of silver were forced not only into the cavity left by partial evacuation of the pus, but also in the surrounding infiltrated tissue. This causes, in two or three days, a painless softening of the diseased glands, or even brings about a more favourable result,—*i.e.*, prompt resolution of the inflammation. The treatment is contra-indicated in the strumous form of buboes. These cases require radical operation. In seventy cases treated according to the method just detailed the average period of healing was ten days. In eight cases healing occurred in from three to five days; in eight cases cure was not accomplished for twenty-five to thirty days. In the great majority, convalescence was complete in from five to ten days.

REFERENCES.—[1] "New York Med. Journal," Oct. 28, 1893; [2] "Therap. Gazette," June 19, 1894.

Synopsis.—(Vol. 1894, p. 141.) Lydston advocates early **Excision**. If suppuration is present, free **Incision** and **Curetting** are required for a non-virulent bubo. **Suturing** under antisepsis is justifiable. Virulent suppurating bubo requires thorough cleansing with **Hydrogen Peroxide**; cauterization with pure **Bromine** or **Carbolic Acid**. **Balsam of Peru** is a good dressing for granulating buboes. Wielander's abortive method consists of injecting 15 ♏ of a 1 % solution of **Benzoate of Mercury**, followed by compression. Otis scrubs the skin around with soap, then washes with **Sulphuric Ether**, and then **Bichloride of Mercury**, 1 in 1,000. He next incises with a narrow bistoury, squeezes out the pus, irrigates the cavity with **Mercuric Chloride** solution, 1 in 1,000, and immediately fills it to moderate distension with warm **Iodoform Ointment**, 10 %, by means of a glass syringe.

BURNS.

The following is Unna's prescription for burns:—

℞ Lanolini parts x
Adipis Benzoati parts xx | Aq. Calcis parts xxx

REFERENCE.—"Med. Press," May 23, 1894.

Synopsis.—(Vol. 1894, p, 142.) Liebet dusts on powdered **Europhen** after opening the blisters, applying the following above this, and on sterilised gauze: ℞ Europhen 8 parts, Olive Oil 7 parts; dissolve and add: ℞ Vaseline 60 parts, Lanolin 30 parts. Bienert uses **Glycerine** for water scalds directly after the accident, applying it on strips of lint. **Thymol** $\frac{1}{20}$ to $\frac{1}{10}$ % is usefully added to **Carron Oil** in treating burns. For children, the following is specially advised: ℞ Bismuth Subnit, gr. 30; Acid. Borici gr. $67\frac{1}{2}$; Lanolin. ℥xvijss; Ol. Oliv. ℥v, M.

CANCER. *W. H. Elam, F.R.C.S., Eng.*

The term cancer is here used in no limited sense, but in the manner employed by clinical teachers and writers, and implies malignant disease as generally understood. It includes both sarcomata and the different forms of carcinomata and rodent ulcer. The contributions to literature during the past year are very voluminous and in many cases of a very controversial character. No attempt can be made to give a complete review of all that has been written, or to note all the work that has been done in this important field of disease. The following points have been selected for elucidation as being the most essential and practical, which at the same time embrace nearly the whole of the most interesting contributions on the subject :—

(*a*,) Is the number of deaths from cancer increasing?

(*b*,) Have micro-organisms any causal relations with it?

(*c*,) How shall we best treat it?

(*d*,) What are the prospects of successful treatment?

Other matters relating to cancer will be incidentally referred to, but for the most part all the subject matter must come under the above headings.

Increase of Cancer.—There is a very widely prevailing belief that the number of deaths from cancer is increasing, or has increased during the past few years. Mr. Geo. King and Dr. Arthur Newsholme[1] have elaborately examined the statistical evidence on which this belief depends.

The figures of the Registrar-General in his report show that the registered number of deaths from malignant disease was 2·7 times more in females, and 2·0 times more in males in 1891 than on the average in the decade 1851 to 1860.

Cancer is in a marked manner a disease of mature life, and, as has been noted in these pages previously, a much greater number of people attain to mature life and the "cancer age" than in past years, and as the comparative proportion of those who attain the cancer age with those who died young is now much greater, error may easily creep into our statistics if not carefully scrutinised. There are also

local peculiarities which need to be considered. The average age of females in England and Scotland is higher than that of males, whilst the opposite is the case in Ireland, and the average age of the people in Ireland is much higher than that in England and Scotland, so that the Registrar-General's report in so far as it refers to this subject is unduly unfavourable to the female sex in Great Britain and the male sex in Ireland, and the death rate from cancer in Ireland is increased as compared with England and Scotland.

Without following these gentlemen through their elaborate paper it may be briefly stated that the conclusion arrived at by them is that there is no real increase in the mortality from cancer, but that the apparent increase is due to more correct diagnosis, and the apparent proportionate increase to the increase in the number of persons who attain mature age.

Etiology of Cancer.—It is not necessary here to refer to the many well known hypotheses to explain the origin of cancer—some plausible, some far-fetched, some based on statistics of clinical facts, some based on deductions from developmental peculiarities or imperfections.

Heredity, age, sex, physiological peculiarities, the influence of chronic irritation, vestigeal inclusion, food, drink, smoking, occupations such as workers in soot, or coal tar products, geographical and topographical peculiarities, all have been discussed in previous volumes. Local and chronic irritation undoubtedly have a larger influence in the causation of cancer than any other known cause, and this should always be kept in mind, both in the treatment and the precautions necessary to be taken for the prevention of cancer.

Mr. Hutchinson[2] has recorded several cases of epithelioma occurring in people who have taken arsenic for some time, and also cases of arsenic keratosis. Some of the cases of epithelioma were multiple. It is a well known fact that arsenic taken for psoriasis causes a marked change in the condition of the psoriasis spots, making them redder and more irritable, and this shows in a peculiar manner the action of chronic irritation in making a part more vulnerable to the cancerous process.

Mr. D'Arcy Power[3] and Mr. Webb have collected several reported cases where within a comparatively short period of time deaths from cancer have occurred in the same house. In one case three persons who occupied the same bedroom in succession died from cancer in a period of nine years. In another case reported by Mr. Shattock four people died from cancer in the same house in fourteen years. Mr. Cooper, of Chathris, mentions three cases of cancer of the tongue oc-

curring in cows on a piece of land near there. Several other similar occurrences are reported of several deaths in one house, and in most of them there was no blood relationship.

These facts cannot count for much with our present knowledge; they may be of great import on some future occasion. At present it is well to have them recorded. When it is remembered that more than 10 per cent. of those who attain the cancer age will probably die of cancer, it is easily conceivable that we may get somewhat startling facts from statistics. The writer knows a short road in which six deaths have occurred from cancer during the last three years, three next door to each other, but in no house has there been more than one case during eight years. In regard to areas and particular geological conditions, all statements must be received with caution. It has been said that cancer is more frequently found with a damp clayey soil and beside water than in the opposite conditions, but in one known district more cases of cancer occur on the hill where the soil is gravel and dry than in the valley where the soil is clay. Of the facts enumerated above, and which are always dwelt upon in discussing the causes of cancer, all, or several might be selected, and statistics obtained in favour of one or the other having a causal relationship with it. At present, however, all that can be truthfully said is that there may be conditions favouring the development of the disease in the same way that bad hygienic conditions favour the spread of fevers. One thing is quite certain, viz., that whatever lowers the general standard of health or depreciates the resistence of the tissues to disease, will increase the liability of the individual to cancer. It must be within the knowledge of every surgeon, that patients suffering from cancer of the breast—perhaps the most hopeful of all cancerous affections for treatment—who have been exposed to most unfavourable conditions of environment prior to operation, and can be removed from those surroundings to healthier and better states, survive without recurrence of the disease for a long period, whilst on the other hand those who return to the previously existing state of privation, hard work, and hygienic evils, have a very early return of the disease.

Considering all these things we may say that no satisfactory explanation of the cause of cancer has been demonstrated. Speculation and research have been prosecuted in many directions and no doubt valuable information has been obtained, but in the opinion of many the primary cause of this disease has not yet been discovered. That the fruitful results of research in the domain of many diseases now known to be micro-parasitic has directed attention to the possible

parasitic origin of cancer is not matter for wonder, and probably it will be proved beyond doubt as it has been proved to the satisfaction of some, that the productive cause is a micro-organism. If it be parasitic in its origin it can hardly be compared with an infective malady, for every individual is immune to the disease until a certain condition or combination of conditions occur in the individual.

At the Medical Congress in Rome, Professor Foa[4] read a paper on this subject. He reviewed the history of the parasitic theory and the results of the investigations of different observers, and then described the bodies which he believed to be the exciting cause of cancer. They are endoprotoplasmatic bodies, paranuclear, enclosed by a capsule with a double outline, and consist of thin protoplasm and a small central body. In size they vary from that of a small to that of a large nucleus. When the body is large the protoplasm on the surface appears festooned and shaped like a cockade or regularly segmented, and presents the aspect of a rosette.

When the parasite increases, the central body increases and the protoplasm decreases. The central body then divides into a number of small round bodies which fill the cyst-like parasitic cell. These bodies are spores. The capsule, the protoplasm and a small amount of mucous substance are coloured deep blue by hæmatoxyline and are thus differentiated from the nuclei and protoplasm of the epithelial cell. These parasites are found in nearly all cancers of glandular origin ; they are more difficult to find in cancers derived from superficial epithelium.

The parasites are found in the primary mass and in secondary nodules, even the most recent, but are not found in the degenerated areas. In a case of pulmonary cancer the parasites were found in the cylindrical cells, but not in the polygonal cells of which the growth largely consisted. Owing to the number in which they are found in a single cell, and their size, they cannot be mistaken for degenerate nuclei.

Mr. Plimmer and Dr. Ruffer have described the same bodies. Mr. Plimmer says he has found them in every case of cancer he has examined, and he has examined four hundred consecutive cases at the Cancer Hospital. He can find them in none but cancerous growths, and he has searched for them in fibromata, papillomata, gummata, neuromata, etc. These gentlemen have described the various stages of the reproductive process of the parasite in the "Journal of Pathology and Bacteriology." Mr. D'Arcy Power, after irritating the vaginal mucous membrane of a rat and placing

there a piece of cancer, succeeded in obtaining these bodies from the infected cells.

Mr. Plimmer and Dr. Ruffer have shown that these bodies exist in the cancer cells in the fresh state, so that they cannot be the changes in the epithelial cell produced by hardening processes.

The various bodies described by many observers, viz., by Korotneff, Jackson Clarke, Wickham, etc., are believed not to be parasitic but altered cells and leucocytes. Other bodies are held to be granules of Altmann, hyaline drops, or to be altered red blood corpuscles.

Many observers object that the bodies described by Foa, Plimmer, and Ruffer, and Soudakewitch are degenerative products, or the inclusions of old and degenerated cells, or blood corpuscles, or chromatic fragments, or the product of the breaking up of nuclei, or the degeneration of the nucleus and nucleoli, or the artificial products of staining and hardening reagents.

It was also objected that they could not be found in the fresh state, and could not be inoculated.

Mucoid degeneration is the only condition giving a reaction similar to the parasites with hæmatoxyline, but the droplets of mucus are granular, do not possess a capsule, and do not show the differences of structure found in the bodies.

The granules of Altmann and the red and white blood corpuscles behave in quite a different way under staining. Fragmentation of a nucleus of an epithelial cell has never been seen to give origin to bodies similar to the parasites. These bodies have none of the reaction of nuclear matter, and cannot be stained by the most sensitive nuclear test.

It is true that cultivations, etc., have failed, but hitherto no cultures have been successful with the plasmoids of malaria which are without doubt protozoa.

Failure of cultures is no negative proof in regard to these bodies, nor does the want of success in inoculation of cancer go for much. It may be assumed that cancer can only be transplanted in subjects of the same species and in conditions favourable for its transplantation. We know now that some animals are immune to certain diseases believed to be caused by micro-organisms, and we also know that parasites are specific for a given organism and for given elements of the same organism.

Foa thinks that failure to find the bodies in all cancers may be due to the fact, that the mass only contains spores which

have escaped from the capsule into the containing epithelial cell, and that by these spores the infected cell may carry infection to other parts of the body.

Mr. Shattock, in the Morton Lecture, goes carefully over the ground of this subject, and discusses it in all its bearings. The only bodies that appeared to him at all suggestive of parasites were those described by Foa, Ruffer, and Plimmer, already referred to. He thought the bodies described by Dr. Cattle in the "Journal of Pathology and Bacteriology," and the "British Medical Journal," April 21, 1894, was only a cell invagination in which the cell protoplasm of the included cell was highly vacuolated and the cell membrane well marked. The bodies described by Jackson Clarke, and others, have been already referred to. It is well to bear in mind that fusion of cells is common in growths, especially when the cells are becoming keratinised, and that it is not easy to distinguish between nuclei in giant cells and the parasites.

Mr. Shattock[5] described his method of cultivating in sand, in Petri's capsules, growths taken from the margins of a mammary cancer. In five out of six capsules he was able to show actively moving amœbæ, and in some of these there was a process of encapsulation and sporulation going on.

Clinical facts have some bearing on the subject, certainly not of a negative character. If cancer be an infectious disease it is a fair assumption that it is a micro-parasitic disease. The following facts are in favour of its being infectious, viz., its frequent occurrence in some localities as compared with others, and in certain houses, the so-called "cancer houses," and its occurrence in more than one member of the same family.

Many cases have been known where it has occurred in husband or wife, one consecutive to the other. Cases of "contact cancer" are frequently met with where one growth excites another in apparently healthy skin with which it comes in contact. Regulski found this occur in thirty cases out of a thousand and ten cases of cancer of the lip, where the growth in one lip excited or appeared to originate disease in the opposite lip at the point of opposition.

On the other hand if cancer be an infectious disease one should be able to transmit it by inoculation. Many experiments have been made in every conceivable manner to ingraft or inoculate carcinoma, and it may be said without fear of contradiction that there is no well authenticated case of successful transference of human carcinoma to lower animals. In all cases the ingrafted mass died, or was absorbed, or occasionally became encapsuled. Success has undoubtedly been

obtained in experiments directed to the transmission of the disease from one animal to another of the same species, but this does not really prove the infectiveness of cancer. One should be able to separate the infective material and reproduce the disease with this. Of course this objection might be urged against other diseases which are known to be infective, as will be shown when referring to the question of the micro-parasitic origin of cancer. Probably the infective agent is unable to act except in the presence of the physiological or pathological concomitant conditions which we know favour the initiation of cancer. It is well known that local injury or inflammation due to continued irritation favours the commencement of epithelioma. The failure to separate the infective material or agent would to a certain extent be expected if this be a protozoon as the demonstrations of Foa, Ruffer, and Plimmer tend to show.

Boinet[6] with all antiseptic precautions made sixty inoculations of scirrhus of breast and epithelioma of lip on rats, rabbits, and guinea-pigs. In a series of forty intraperitoneal inoculations generalisation of cancer took place in one. In fifteen subcutaneous inoculations the results were all negative. Subcutaneous injection of the juice of a lympho-sarcoma of the testicle caused a growth of corresponding nature at the point of injection. Injection of the same juice into the pleura of an old rat caused the development of a growth in the lung of the same side.

An important question is not infrequently forced upon the notice of the surgeon, viz. : Can a benign growth become a malignant one, or can the removal of a benign growth be followed by recurrence *in loco* of a growth of a malignant type ? This question may undoubtedly be answered in a guarded affirmative manner. Recently Berger reported a case of a young man who had a fibroma removed from the left index finger which had existed seven years. Four years afterwards he disarticulated the same metacarpal bone for a fibroma. Two years afterwards there occurred *in loco* a tumour which, when removed, proved to be a sarcoma.

Verneuil[7] reported a case of a woman who had successively an uterine polypus, an adenoma of the face, and a cancer of the breast.

Routier observed a woman who had syphilitic vegetations at the margin of the anus, which were removed and had the histological characters of a syphiloma. Three years afterwards Routier removed from the groin a large mass of glands which were typical epitheliomata. Three years after this he removed from the lower part of the cicatrix in the groin a small mass of epithelial cancer.

Of course these facts only prove that a part which has been weakened,

or has had its resistance reduced by operation, may become the seat of a sarcoma or carcinoma.

Dr. Dickinson[8] exhibited specimens to the Pathological Society which appeared to have commenced as fibro-myoma and became sarcomatous. Liebman mentioned cases where pure myomata were found as metastatic deposits in lungs, in which the primary disease was a myo-carcinoma and not myo-sarcoma, and Dr. Alban Doran mentioned several similar cases known to him.

It is well-known that a mole may become a melano-sarcoma, that epithelioma may develop in a wart, scar, lupus, syphilitic sore, etc. Mr. Hutchinson has reported cases of "arsenic cancer" occurring in those who have taken arsenic for the treatment of psoriasis.

All these considerations have an important bearing on the question of treatment.

Before considering the treatment of cancer it is a natural question to ask what the prospects of success are, and what these hopes are based upon. If we have not been able to discover the precise cause of cancer, are we any more able to treat it successfully than in the past? If statistics have any value, if the individual experience of the surgeon does not lead him into error, there can be no doubt that many more cases are now cured than was the case formerly. As will be seen from the following excerpts, it is on the early and free removal of the disease that we must rely if we are to attain the end so much desired. In all cases when an operation should be undertaken, the patient may almost be promised a certain recovery from it; advances in surgery have done this much. In most cases if the disease be removed freely and all possible infected glands can be removed at the same time, a fair hope of cure may be promised, or at least the patient placed in a position such as to be no more liable to recurrence than to the primary disease. Of course people shrink from the thought of operations, and postpone seeking advice until the disease has advanced from a probably curable one to an almost certainly incurable one. If sufferers could be made to realize that they would certainly recover from operations, and that cancer if recognized in an early stage and removed would probably not recur, our results would be much more satisfactory.

Of course it is only in exceptional cases that the surgeon has the opportunity given him of an early operation and a successful result. Sometimes he, too, being uncertain in his diagnosis, allows the favourable moment to slip by, and whilst waiting for the time when the glands become infected and the sequence of symptoms leaves no room for doubt, general infection is taking place and operative interference at

most can only be palliative. Where ever there is doubt an exploratory incision will clear it up.

It is said about some forms of malignant disease that the prognosis is hopeless from the first. Cases of sarcoma of the femur are almost always fatal. With sarcoma of the humerus the danger of recurrence is great, and here it would be better to remove the scapula and part of the clavicle, so that every muscle connected with the humerus could be removed in its whole extent.

In twelve cases of sarcoma of the humerus operated on by Bergmann[9] six were treated in the radical manner suggested, and there was no recurrence, but in six when the possibly diseased muscles were not removed there was recurrence. He always ligatured the subclavian vessels as a preliminary step. In carcinoma of the breast the axilla should always be cleared of its contents, the fascia removed from the pectoral muscle, or, the latter, if diseased, removed in its whole extent.

In twenty cases of carcinoma of the breast operated on by Mr. Watson Cheyne[10] during 1890, 1891, and 1892, fourteen remained well and four recurred. Out of fifteen cases done more than two years previously, ten showed no indication of recurrence. In all cases the removal was free, the skin, breast tissue, fascia over and part of the pectoral muscle, as well as the contents of the axilla, being cleared away.

Dr. Abbe[11] reports two successful cases of nephrectomy in children for sarcoma of the kidney, and thinks we may expect more favourable results than have been recorded. Barth collected one hundred cases of nephrectomy for malignant disease, of which forty-two died from the operation, twenty died from metastasis, and thirty-eight remained well.

Sigrist collected sixty-four cases of operation, of which thirty-two died, nine went a year and a-half and had recurrence, five went beyond two years, and one continued well after four years.

Treatment.—Bacteriological research has directed attention to the treatment of diseases known to be, or believed to be caused by micro-organisms by what are now called toxines. Some time ago tuberculosis, and recently diphtheria, have been treated by hypodermic injections of fluids obtained by pure cultures of the specific micro-organism, or in some other manner.

It had frequently been noted that an attack of erysipelas had a very favourable influence in checking the growth of cancer. Examples of this have been described in previous volumes of the "Medical Annual," and also a case of sarcoma which could not be removed by operation was cured by an attack of typhus fever.

Many experienced surgeons have held that free suppuration after

operations for the removal of cancer, lessens the probabilities of recurrence of the disease. It has also been asserted that the cure of cases of sarcoma by injections of arsenious acid was due not to the arsenic, but to the free suppuration caused by the injections, and it is possible that cases reported as cured by injections of pyoktanin were the result of the inflammation and suppuration excited by the injections, and not to the drug injected.

Dr. Coley[12] has treated twenty-five cases of sarcoma and ten cases of carcinoma by what he terms the combined toxines obtained from pure cultures of the bacillus of erysipelas, and the bacillus prodigiosus. He finds that injections of toxines give as good results as those obtained by the injection of the micro-organism itself. His experience was that the treatment by this method was of very little use in gland carcinoma, beneficial to a slight extent in epithelioma, and of great benefit in sarcoma, especially when the growth is situated in soft tissues. Of the twenty-five cases of sarcoma six appeared to be cured: one case of sarcoma of the tonsil and neck which had twice recurred was cured and remained well three years afterwards. Of the remaining nineteen cases, nine showed marked improvement, eight slight improvement, and two no improvement whatever.

Needless to say this treatment was adopted only in cases which were so advanced as to be beyond treatment by operation, and were considered hopeless.

Other surgeons do not appear to have had the same success, but a negative result can never have the value of a positive result. If six cases out of twenty-five have been cured, the treatment must be of some benefit. As the treatment by toxines is as useful as treatment by inoculation of erysipelas and is free from danger, it should always be used. The best results were obtained by injecting the fluid into the growth, and when the toxines of the bacillus prodigiosus and streptococcus of erysipelas were used.

Dr. J. C. Ross[13] called attention to the benefit he had obtained in cases of cancer from the treatment with **Cinnamon.** He prepared the cinnamon by slowly boiling one pound of the Ceylon sticks with three pints of water until the bulk was reduced to one pint. Of this solution half-a-pint was given daily.

Mr. Hulke[14] tried this remedy, prepared as above, on five cases in the Middlesex Hospital. Three were uterine, one rectal, and one recurrent glands in the neck. In four of ten cases the treatment was continued for nearly three weeks, when the drug became intolerable to the stomach and could not be continued. In the fifth the patient took the medicine for one month, and then begged to be allowed to

discontinue it. In three of the cases there was the definite evidence of increased growth whilst taking the remedy. In none was there any evidence of relief from pain or benefit in any way. Mr. Hulke who had tried cinnamon oil some time before, more especially for uterine cancer, on both occasions, observed absolutely negative results.

The writer some years ago tried cinnamon oil on many cases in the Cancer Hospital, which were unsuitable for operation, both by application to the ulcer, interstitial injections and internal administration, without any benefit whatever to the sufferer.

Dr. Bernhardt[15] has obtained very satisfactory results in the treatment of inoperable cancer of the uterus by injections of **Salicylic Acid.** A 6 per cent. solution of salicylic acid in 60 per cent. alcohol was injected with a Braun's syringe having a long small needle. The solution was injected into various parts of the growth to the extent of two cubic centimètres at a sitting. The injection caused some pain which quickly subsided. Dr. Bernhardt thinks this method approaches very near to curing the disease.

Darier[16] has found good results from treatment of ulcerating cancers by **Methyl-blue.** It is his opinion that the apparent failure of this remedy to cure is due to the too early discontinuance of the applications. He first of all cauterizes the ulcerated surface with the thermo-cautery, or applies chromic acid, and then uses a solution of methyl-blue, 1 in 100, either painting it over the surface or using interstitial injections.

Dr. Griswold uses caustics for treating epithelioma of the face, when the patient rejects a cutting operation. He heats **Sulphate of Zinc** until all the water of crystallization is driven off; he then makes it into a fine powder, and adds to the powder sufficient pure **Sulphuric Acid** to make a paste. This paste is applied over the sore, care being taken to protect the surrounding parts. In about ten minutes the paste sinks into and destroys the tissues for a distance of one-eight of an inch. This necrosed structure is scraped away with a knife until the unchanged tissue is reached and the paste again applied, and this is repeated four or five times, or until the whole of the disease is destroyed; very little pain is caused and this could be relieved by cocaine.

A case of epithelioma of the corneo-scleral junction was cured by Martin,[17] by injections of **Sublimate** after recurrence subsequent to operation.

Fumagalli reports cases of ulcerating epithelioma being either cured or very materially benefited by being dusted over with powdered **Chlorate of Potash.**

Professor Lassar[18] showed to the Berlin Medical Society two cases of cancer of the skin which had been cured by **Fowler's Solution.**

Dr. Touton reports a case of sarcoma of the skin which had been cured by **Arsenic.**

Tongue.—Mr. Butlin has removed the whole or half the tongue with only one death in forty-six consecutive cases. Nineteen patients were over sixty years of age, and some of them were suffering from organic disease of internal organs. All the operations had been performed by Whitehead's method, and in those cases where the disease was situated wholly at the back of the tongue the lingual artery was ligatured, as it was also in those cases in which it was necessary to remove the submaxillary glands.

Many of the cases of death after removal of the tongue are due to septic pneumonia caused by the food and unhealthy discharges in the mouth finding an entrance into the trachea and lungs.

Mr. Butlin[19] attributes his success to the precautions he takes to prevent the occurrence of this by careful after treatment. He endeavours to keep the wound in the mouth aseptic by frequently dusting it with iodoform, for the first week or ten days after the operation, and frequently washing out the mouth with condy to cleanse it of all fluids which may collect there. To prevent the secretions from the mouth trickling into the air passages, the patient's head is kept low and lying on the side from which the greatest portion of the tongue has been removed. The feeding of the patient is most important. When a portion only of the tongue has been removed, swallowing is not very difficult. Rectal alimentation may be resorted to in the first few hours after operation. Afterwards the patient may be fed through a feeder with a spout, to which three or four inches of india rubber tubing has been attached, lying on the side opposite to that from which the half of the tongue has been removed.

When the whole of the tongue has been removed the patient is fed by the rectum for the first two days, after which fluids may be carefully given by the mouth. If swallowing is very difficult, and if there is any sign of the food finding its way into the trachea, a black bulbous catheter having an india rubber tubing and glass funnel attached to it is introduced into the upper part of the œsophagus. If necessary, the throat may be sprayed with a 3 or 4 per cent. cocain solution before introducing the tube. Any milk or other food hanging about the upper part of the throat rapidly decomposes and should be watched for.

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Journ.," June 9, 1894 ; [4] "Lancet," April 14, 1894 ; [5] "Brit. Med. Journ.," May 19, 1894 ; [6] "Sem. Méd.," March 13, 1894 ; [7] "Revue de Chir.," June, 1894 ; [8] "Lancet," Jan. 6, 1894 ; [9] "Annals of Surg.," June, p. 709 ; [10] "Lancet," Jan. 20, 1894 ; [11] "Annals of Surg.," Jan. p. 58 ; [12] "Therap. Gaz.," Aug. and Sept., 1894 ; [13] "Lancet," July 21, 1894; [14] Ibid., Sept. 15, 1894 ; [15] "Annals of Surg.," June, 1894 ; [16] "Le Méd. Mod.," May 12, 1894 ; [17] "Annal. d' Ocul.," May 1894 ; [18] "Münch. Med. Woch.," No. 4 ; [19] Brit. Med. Journ.," April 14, 1894.

Synopsis.—(Vol. 1894, p. 149.) Subsequent to operation, Wright uses **Arsenic Bromide** $\frac{1}{40}$ to $\frac{1}{10}$ gr. doses after meals, and **Carbonate of Lime**, 5 to 10-gr. doses before meals in **Tincture of Calumba**. For small warty growths, **Jennings' Paste** is useful, viz.: ℞ Cocain, Hydrochlor. 2 parts, Caustic Potash 12 parts, Vaseline 6 parts. Its action is checked by applying **Acetic Acid**. **Marsden's Paste** is as follows: ℞ Arsenious Acid 2 parts, Mucilage of Acacia 1 part, mixed in a thick paste; only to be used in cancers under four in. square and not applied to more than one square inch at a time. **Bougard's Paste** is used similarly, but on a larger surface: ℞ Wheat Flour, 60 grms.; Starch, 60 grms.; Arsenic, 1 grm.; Cinnabar, 5 grms.; Sal Ammoniac 5 grms.; Corrosive Sublimate 0·50 cgrm.; Solution of Chloride of Zinc at 52° Fh. 245 grms. Després prefers **Petroleum** as a dressing for scirrhous ulcers. **Pyrogallic Acid** ʒj to **Vaseline** ʒj acts somewhat like arsenic, if continuously applied for two to seven days, and causes little pain. **Resorcin** and **Salicylic Acid** are useful at times. Pyoktanin and fuchsin are found wanting. Areoles recommends **Aristol** for the symptomatic treatment of cancer of cervix uteri. As a deodorant injection the following may be used in uterine cases: ℞ Ac. Salicyl. gr. viij; Sodii Salicyl. ʒiij; Tinc. Eucalypt. ʒvj; Aq. Dest. ʒvj. M. *Sig.*—3 tablespoonfuls to be added to a pint of water and used every three or four hours.

CARBUNCLE.

Synopsis.—(Vol. 1894, p. 154.) Rushton Parker advocates removal of the whole mass by knife and sharp spoon, and dressing with **Cyanide Gauze**.

CATARRH (Post-nasal). *Greville MacDonald, M.D.*

Catarrh, or increased flow of mucus, is frequently spoken of not only by the laity, but also by the less precise in the profession, as though it were a disease in itself; and post-nasal catarrh is frequently described as an affection *per se*, whereas it is but the more troublesome symptom of many diseases of the nose and post-nasal space. I admit that there are cases where it is difficult to detect sufficient objective morbid conditions to account for the excessive flow of mucus ; but in every such case, I venture to assert that we are necessarily dealing with more remote disease of which the catarrh is but one of many symptoms. Thus any conditions which induce an excessive flow of mucus in the anterior nares will induce more or less post-nasal catarrh, more especially when the mischief is situated in the posterior portions of the choanæ. Of such, the most common are polypus,

especially of the cystic variety, and posterior enlargement of the inferior turbinated bodies. These are not infrequently overlooked, owing to the difficulties encountered by the inexperienced in obtaining a view of the post-nasal space. Yet generally speaking, with posterior enlargement of the inferior turbinated bodies, the velum is more or less paretic, or appears to be so, owing to the weight of the hypertrophies projecting backwards and lying on the upper surface of the soft palate. The other frequent cause of post-nasal catarrh is hypertrophy of the pharyngeal tonsil and adenoids ; but as these occur for the most part in children, who do not readily manifest or complain of the excessive flow of mucus, the latter symptom assumes less importance than in the adult. Finally, it must be remembered that post-nasal catarrh is often but a symptom of a general rhinitis in its multiplicity of forms, and that a patient often declares that his trouble is post-nasal catarrh, whereas he is really suffering from empyema of the antrum or other accessory cavity. The simple form of catarrh of the naso-pharyngeal mucous membrane, without sufficient objective disease to account for it, is sometimes to be improved to a great extent by cautious cauterizations of the mucous membrane on the pasterior wall. This is more useful in cases where the secretion is profuse, rather than stagnating from its tenacity or inspissation. In the latter case stimulating nose-washes, such as **Ammonium Chloride**, gr. 5 to the ounce, are extremely useful, and sometimes effect a cure. But it may be necessary for the patient to use some such lotion as a daily toilet-duty for the greater part of his life. The nasal douche and the post-nasal syringe ought to be forbidden, in consequence of the risk of the fluid used finding its way into the Eustachian tubes.

CHANCRE.

Lorand[1] describes the mode of treatment by **Heat** which he saw carried out by Wielander at Stockholm. It is based on the observations of W. Boek and of Aubert, the latter of whom found that chancrous pus heated to 40° C. became non-inoculable. Wielander's method is as follows : Water is conducted by two pipes, one carrying hot and the other cold water, to a copper reservoir, and is there kept at temperature of 50° C. by means of a gas jet. From the reservoir the water is carried by a rubber pipe to a coil of lead tubing through which it circulates, and then escapes by another rubber pipe. If the water in the reservoir is kept at 50° C. it is found that when it reaches the coil it has a temperature of about 41° C., below which it must not be allowed to fall. The ulcers are dressed with pledgets of cotton wool soaked in warm water, any undermined edges being first snipped

off. A layer of moist wool is then applied round the penis, and over this the lead tubing through which the hot water is kept flowing. Another layer of wet wool covers the tubing, and the whole is covered with gutta percha tissue. The dressing is changed three times a day. Lorand saw about twenty cases, in some of which the chancres were both numerous and large, treated in this way. In the majority it was found that after two days' treatment the ulcers were clean and healthy, and then the secretion was no longer inoculable. The patients were then allowed to go home, and were treated as out-patients. The sores usually healed quickly under the application of **Dermatol**. Wielander's statistics showed that among one hundred and eighteen patients who had been treated by his method at an early stage there was no case of bubo.

Worster[2] calls attention to the rapidity with which chancres heal under somewhat prolonged spraying with **Peroxide of Hydrogen**, full strength, the vapour of which is projected against the lesion with a cylinder pressure of sixty pounds. Three cases are reported which seemed to corroborate the author's claim for this method. It is one which has long since been recognized as the most efficient means of applying antiseptic solutions, and indeed simple sprays of water alone exert a surprising resolvent effect upon both acute and chronic phlegmons, some of the French observers having claimed for this method (when **Carbolic Acid Solutions** are used) absolutely abortive effects in the treatment of carbuncles or boils.

Messrs. Hallopeau and Brodier[3] conclude that: (1,) **Di-iodoform** may be used in simple chancres in the same way as iodoform: it generally cures in eighteen to twenty days; (2,) It is well borne, and produces neither pain nor local irritation; (3, It has the advantage over iodoform that it gives out no odour, provided it is kept away from the light in well stoppered bottles; (4,) It may, like iodoform, fail to cure in cases of phagedænic chancre; (5,) It should be applied several times daily: the ulcer should be kept covered with absorbent cotton-wool impregnated with the drug; (6,) It gave good results in a case of lymphangitic abscess of the penis, and generally it is applicable in the treatment of the suppurations and ulcers which are benefited by iodoform dressings.

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Synopsis.—(Vol. 1894, p. 155.) Goldenberg commends **Circumcision.** Castel uses: R Carbolic Acid, gr. xv.; Alcohol (90%), ʒijss.; dissolve and touch the surface lightly. Cavazzani treats soft chancre with a mixture of **Chloral**, 5 parts; **Camphor**, 3 parts; **Glycerin**, 25 parts.

CHLOASMA (Uterine).

Synopsis.—(Vol. 1894, p. 157.) Bichloride of Mercury, 5 grs. to Aq. ℥j, carefully painted over the skin, removes the spots. To restore the tone of the uterus Galvanism may be used, or the insertion of a Soluble Intra-uterine Pencil, preferably one containing Iodoform, and repeating the process.

CHLOROSIS (The Accompaniments of). *Frederic C. Coley, M.D.*

The most important fact in connection with chlorosis is its action upon the heart. The first effect is dilatation. The simplest evidence of this is the displacement of the apex beat, which is, in my experience, hardly ever to be found in the normal position in a case of chlorosis sufficiently advanced to produce symptoms urgent enough to induce the patient to seek for treatment. It may be taken, as a rule, that in a well-marked case of chlorosis the impulse of the heart will be found either in the nipple line, or more commonly external to it. The frequent result of this dilatation, as it affects the left ventricle, is regurgitation through the mitral valve. It is not a little curious that, whereas tricuspid regurgitation, as a result of dilatation of the right ventricle, is a commonplace of clinical teaching, mitral regurgitation arising in a similar way is comparatively little recognized. And yet I shall show that this condition is very common in chlorosis, without necessarily adopting Balfour's view that the systolic bruit heard at the so-called pulmonary area is necessarily evidence of functional mitral insufficiency. I shall not enter into the vexed question of the causation of this bruit, further than to remark that at any rate low tension in the pulmonary artery is *not* the correct explanation. For I have repeatedly observed it together with marked accentuation of the pulmonary second sound, which is, of course, evidence of increased pulmonary tension. Moreover, I have noticed more than once that when bronchitis happens to be present in a chlorotic patient, the pulmonary bruit is audible as usual, and it is hardly necessary to remark that bronchitis has a tendency to raise the tension in the pulmonary artery.

Waiving, however, all discussion as to the real significance of a systolic bruit heard only at the pulmonary area, I think there will be no hesitation in admitting that regurgitation is taking place through the mitral valve, when there is a well-marked systolic bruit audible at the apex of the heart, and in the axilla, and at the angle of the scapula. But on referring to my notes of four hundred consecutive cases of chlorosis, I found a bruit audible at the apex in two hundred and seventy eight, and at the angle of the scapula also in one hundred and twenty three. It was audible at the pulmonary area in all. That these evidences of mitral insufficiency were generally due to a functional condition was proved, not merely by their great frequency, but by the

fact that in a very large number of the cases the bruits entirely disappeared when the chlorosis was efficiently treated. This is so general, in fact, that if the evidences of mitral regurgitation in a case of chlorosis persisted in spite of continued treatment, I should be disposed to believe that I had really to deal with chlorosis complicated by the presence of organic mitral disease caused in the ordinary way by a previous attack of endocarditis. This combination of chlorosis with valvular disease is not very uncommon. But when it occurs the chlorosis is rather likely to be overlooked. The appearance of anæmia may be masked to a certain extent by the engorgement of the facial capillaries produced by mitral regurgitation; and the shortness of breath from which the patient suffers is attributed entirely to the valvular defect, although it is really due, at least in part, to the anæmia. This is an error of serious practical importance, because anæmia left untreated furnishes just the condition in which the muscular compensation for a valvular defect is most likely to fail, and cause a complete breakdown.

On the other hand, in an uncomplicated case of chlorosis, when a well-marked bruit is heard at the apex and at the angle of the scapula, those who are guided by ordinary traditional clinical teaching would be apt to make a mistaken diagnosis of structural mitral insufficiency with a correspondingly grave prognosis.

Before I leave the subject of physical signs, there are some facts in connection with the effect of the attitude of the patient which call for notice, all the more because a satisfactory explanation of them is yet wanting.

In chlorosis a bruit is often audible at the apex and in the axilla when the patient is lying down, but not in the erect position, except for a few minutes after rising. Such a bruit is often loud. It is often audible when, as a result of treatment, the bruit at the pulmonary area has entirely disappeared. On the other hand, it is quite common to find a bruit at the pulmonary area when none can be heard at the apex in any position of the patient. The bruit at the pulmonary area is not as a rule greatly influenced by posture. And I cannot recollect a case in which a bruit appeared at the angle of the scapula when the patient was lying down, unless it was also to be heard when she was erect.

In chlorotic patients a systolic bruit at the apex (inaudible otherwise) is very apt to be produced by anything which causes the heart's action to be at all exaggerated. Hence a well-marked bruit is often heard at the commencement of the examination which entirely disappears in a few minutes, when the patient's nervousness has a little subsided.

In the statistics above given, I have taken note only of those bruits which were audible when the patient was sitting or standing, and when the heart's action was as quiet as possible. My object was to record the minimum of physical signs, so as to understate, rather than overstate, the evidence in favour of my thesis.

Leaving now the effect of chlorosis on the heart, we have to consider a few other accompaniments of that disease.

Intercostal neuralgia is so common in chlorosis that at one time I supposed it to be universal—at least, to the degree implied by the presence of marked tenderness at the "nerve-points." It is most common at the left side ; less at both sides, and comparatively rare at the right side only.

Frontal headache is very common. But some people seem to be exempt from headache, so that those causes which produce it in others fail to produce it in them. These fortunate individuals may become extremely anæmic without losing their immunity from headache.

Ulcer of the stomach is a common complication, but it would be impossible to furnish statistics of its frequency, because many cases do not present symptoms which could be relied on as absolute proof of its presence. I think there can be no doubt, however, that it is a good practical rule to treat every case as ulcer, where there is pain and frequent vomiting after food, the pain being relieved when vomiting has occurred. Some have suggested that if the anæmia is treated, the ulcer of the stomach may be left to heal itself without any special care. I have little doubt that this method would be successful in many cases. But it would certainly be risky. And I have seen the symptoms of gastric ulcer appear, while chlorosis was improving under treatment.

Lateral curvature of the spine, in its slighter degrees, at least, is very frequently associated with chlorosis, the muscular weakness produced by anæmia favouring its development. It is very commonly supposed that lateral curvature is rare in patients belonging to the working class. This is a pure delusion. Severe cases of lateral curvature are not very common in any class. Slighter cases (but still quite sufficiently developed to be well worthy of special care) are very common in the classes that become hospital out-patients. But it is only among the well-to-do that the slighter degrees of curvature receive attention from the patient or her friends. If they are discovered at all, it will be in the course of a medical examination instituted on account of other complaints.

When a chlorotic patient complains of backache, that is apt to be taken almost as a matter of course, demanding no special attention.

But it will very often be found that it is connected with a certain degree of lateral curvature. I do not propose to consider at present those cases where there is a permanent deformity incapable of being redressed by any manipulation, and presumably implying an actual alteration in the form of some of the vertebræ. But when we find an habitual curvature, which the patient cannot correct for herself, but which can be corrected more or less readily by the hands of the examiner, returning shortly when their support is withdrawn, we have to deal with a condition which is quite important enough to require special consideration. When it appears before the development of the spine is complete, there is always a possibility that it may lead to structural deformity, although this does not always take place, even when the habitual curvature is entirely neglected. But apart from this danger, such a curvature may be sufficient to produce a deformity which is quite as unsightly, while it is allowed to exist, as any (except the most extreme) distortions connected with actual malformation of the osseous structures. And it always involves a sense of weariness and dull aching in the back, although the patient rarely makes any special complaint of this, regarding it probably as only a necessary part of the malaise for which her chlorosis is responsible.

In these cases I very rarely find it desirable to recommend any mechanical appliance. I believe the "shoulder-straps," which appear in all instrument-makers' shops are worse than useless. I simply teach the patient how to correct the faulty position, and examine her from time to time until I find that the habitual curvature is entirely corrected. It is often desirable to enjoin rest in the recumbent position for an hour or more in the middle of the day. But this rest should be taken on a comfortable couch, not on a torturing "back-board"—still less on the floor, after the manner recommended by some practitioners. This method of treatment—merely to teach the patient how to hold herself upright, and to ascertain by repeated examination that she is actually learning to do so habitually—is very simple in theory. But to carry it out successfully requires considerable patience and much attention to detail. The results, however, when the patient is intelligent and persevering in seconding our efforts, are entirely satisfactory.

Synopsis.—(Vol. 1894, pp. 32 & 73.) Liégeois believes that in the præcordial pains and the different neuroses of chlorosis, **Tincture of Piscidia Erythrina**, 20 to 80 drops daily, and continued for a month, may prove advantageous. Schultz extols **Flowers of Sulphur** mixed with **Sugar of Milk**, the dose being as much as will cover the point of a pen-knife thrice daily; it is contra indicated if catarrh of the digestive tract be present.

CHOLERA.

In "L'Union Médicale," a summary is given of the results obtained by the hypodermic injection of **Salines** in cholera.[1] A solution is made, consisting of 5 parts of powdered **Chloride of Sodium**, 10 of **Sulphate of Sodium**, and 100 of **Water**. The temperature is 100° F. The quantity of the injections varies from 1 to 3 pints, and they may be given from three to four times a day. In the hospital at Hamburg, Jolasse, has collected the following statistics from one thousand and seventeen cases: Cases treated by subcutaneous injections, one hundred and four; deaths ninety-two, cures twelve. Cases treated by intravenous injections, one hundred and sixty-seven; deaths one hundred and thirty, recoveries thirty-seven. Cases treated by both subcutaneous and intravenous injections, forty-eight; deaths forty-four, recoveries four. Cases treated by enteroclysis, forty-two; deaths twelve, recoveries thirty. Cases treated by internal treatment, six hundred and six; deaths two hundred and forty-eight, recoveries three hundred and fifty-eight. In addition, there were fifty cases of cholera in which the treatment is not stated.

Moricourt[2] considers that now that the microbic doctrine has introduced into the therapeutics of cholera a number of medicines which, to judge from the articles that have appeared on the subject, have not been attended with results in any way better than those obtained formerly, it is opportune to recall attention to a form of treatment of cholera, which, in his opinion, has been left too much in the shade. He refers to the treatment by **Copper**, which was lauded by Burq at an epoch when the question of microbes was scarcely in vogue. It was found that there was a very small mortality in cholera, typhoid, and the majority of epidemic diseases, among workers in copper, as compared with those working with other metals or engaged in other occupations. In 1849 Burq succeeded in arresting the cramps of cholera by means of copper bars in the majority of cases, and in 1866 **Sulphate of Copper** given internally to patients who had scarcely a particle of pulse, heat, or urine left, effected sixteen cures in eighteen cases.

REFERENCES.—[1] "Therap. Gazette," February 15, 1894; [2] "Brit Med. Journ."

Synopsis.—(Vol. 1894, p. 157.) Niedzwiecki uses subcutaneous injections of Quinine: ℞ Quinine Bihydrochlor., gr. 30; Sodii Chlorid. gr. 0·6; Aq. dest. ebull. q.s., ad gr. 100; 2 Lewin syringefuls to be injected on the first day, and 1 to 2 each day afterwards. Lazaraff and Przedborski treat the vomiting with **Cocaine**: ℞ Cocaini Hydrochlor. gr. 3; Tinc. Menth. Pip. ℥ij.; *Sig.*—Gtt. 10 half-hourly. Blagovidoff checked vomiting and hiccough by **Blisters** applied along the course of the vagus. Ffrench-Mullen employed **Hypodermic Injections of Strychnine** whenever collapse came

on, giving 5 m Liq. Strychninæ in an equal quantity of water; he has also used **Pilocarpine** hypodermically with success. **Ammonio-tetrasulphate of Potassium** is recommended on theoretical grounds to acidify the intestinal contents.

CHOLERA INFANTUM.

Synopsis.—(Vol. 1894, p. 159.) Where marked pyrexia with convulsions only are noted, Gross advises rectal irrigation with **Cold Water**, friction with **Alcohol** in **Iced Water**, and perhaps small doses of **Antipyrin** with a **Strict Diet**, excluding milk, giving thin gruel, boiled **Sugar Water** or **Tea** in small quantities frequently; **Salt Water Irrigations** once in twelve hours, and 6 **Calomel Powders** are given, 1 every two hours. Usually milk can be given again in twenty-four hours, but if attack increases in violence the injections must be more frequent and plenty of fresh air obtained. **Calomel** and **Salol**, or the latter only in late stages, are frequently administered, and during recovery **Hydrochloric Acid** and **Pepsine** are substituted. Obstinate chronic cases are relieved by **Tannin Injections**, and obstinate vomiting usually yields to flushing the stomach once daily with weak **Hydrochloric Acid**. If child is first seen in a collapsed condition, **Warm Irrigation of the Stomach and Rectum, Hot Mustard Baths**, and small quantities of stimulants are preferred.

CHOREA. *Allan McLane Hamilton, M.D., New York.*

The influence of rest, which has been so insisted upon in the treatment of this disease, is again urged by those writers upon the therapeutics of the disease under discussion. In an admirable article written by Eskridge,[1] of Denver, we learn that his mode of treatment consists in putting the patients to bed, and keeping them there, and, in fact, this writer will not assume charge of a case unless the parents or friends of the patient consent to implicitly follow his directions. All play, romping, or exciting exercise is interdicted. The patient receives as many grains of **Antipyrin** as he is years old, and the dose is increased one grain each night until all twitching stops. When commenting upon the tolerance of children to this drug he announced that he has given 20 grains of antipyrin three times daily to a child of eight years, but the contrary indication to its use is the rise of temperature which is excessive when he immediately discontinues it and gives chloral hydrate. He also employs the ordinary **Arsenic Treatment**, pushing the drug.

A writer[2] in the "Union Médicale," suggests in addition to hygienic and rest treatment a pill of which the following is a prescription :—

℞ Valerianate of Zinc | Subnitrate of Bismuth, āā xv grs.
Extract of Belladonna |

Sig.—Make into forty pills, 1 or 2 to be given three times a day.

If arsenic is employed it is well to use it in the form of arsenite of sodium, in doses of $\frac{1}{20}$ to $\frac{1}{10}$ of a grain. Spraying the back with chloride of ethyl is also recommended.

Abercrombie[3] favours absolute inaction and says that severe attacks demand complete rest in a bed with padded sides, or that the child should be slung in a hammock. He does not even permit the child to feed itself, and he absolutely forbids any exercise of mind or body.

REFERENCES. — [1] "Therap. Gaz.," Feb. 13, 1894; [2] "L'Union Médicale," May 12, 1894; [3] "The Medical Record," p. 559, vol. ii., 1893.

Synopsis.—(Vol. 1894, p. 161.) Dr. Carter enforces rest in bed and good nourishment, **Extract of Malt** being a useful adjunct. If possible washing daily with soap and warm water, and general **Massage** for twenty minutes, combined with inunction of **Sweet Almond Oil**. Treatment of constipation, worms, menstrual troubles, etc., **Liquor Arsenicalis** in gradually increasing doses is the best remedy; **Cod-liver Oil** and **Malt Extract** in chronic cases. For sleeplessness a **Warm Sponge Bath** at night, followed by warm milk food and brandy, in some cases is useful. **Bromide of Potash** with **Chloral**, 10 to 20 grs, of each, according to age. In rheumatic cases **Salicylate of Soda** is better than Arsenic, and 5 to 10 ♏ of **Laudanum** may be added to the **Bromide** and **Chloral Draught**. **Hydrobromate of Hyoscine**, gr. $\frac{1}{100}$, acts well in many cases of insanity and hysteria. **Chloralamid**, **Paraldehyde** and **Sulphonal** have all been recommended. **Chloral** has been given in doses sufficient to secure sleep for several days, and thus secure cerebral rest. In toxæmic delirium, **Alcohol** must be freely used, not less than 3 to 6 oz. in twenty-four hours. **Warm Wet Sheet-packs** and a brisk aperient are excellent adjuvants. For paralysis, local injections of **Liq. Strychniæ** in ♏ doses, **Faradism** and **Massage**. Chronic chorea demands systematic **Massage** and steady practice of **Swedish Exercises**. Garriga successfully employed **Sulphate of Strychnine** in initial doses of $\frac{1}{100}$ gr. thrice daily, gradually increased to eight times a day.

CIRCUMCISION.

Gundrum[1] adopts the following method: After removing the skin as far back as the sulcus or cervix of the penis, a dorsal incision is made through the mucous layer of the prepuce to entirely free the glans and tear down the frænum. The mucous layer is trimmed off, leaving a sufficient width to turn back like a cuff and to be stitched to the skin.

This stitching should be so neatly done that all raw surfaces are coaptated. The best material for suture is fine catgut. If this is not at hand, fine aseptic silk will do. Having completed this part of the operation, the penis should be thoroughly cleansed with some aseptic solution and completely dried. Now, with a camel's-hair brush, the penis is painted from the meatus almost to the root with the following mixture:—

℞ Resin	℥ij		
Copal Varnish	℥ij	Tallow	℥ij
Beeswax	℥j	Iodoform	℥j

M.

Heat to about 150° to 175° F.; stir, mixing the iodoform thoroughly. Allow to cool to 115° to 120° F., when it will be ready for use. Apply one coat, and allow it to harden; then another and another, until the penis is hermetically sealed, leaving the meatus free. The dressing is completed by wrapping one or two layers of aseptic gauze round the penis and painting with the mixture. The patient should be seen in forty-eight hours. If the bandage is loose it should be removed. Two or three fresh coatings with the mixture should be applied. Of course the penis should be properly protected by a ring of cotton. The mother is instructed to warm the mixture and apply it with the brush daily until complete cicatrization has taken place. The precaution of testing the heat of the mixture by the finger should always be taken before applying it to the child. When this dressing is used there is no inflammation, no discharge, no swelling, no pain, and no crying and screaming. It is aseptic antiseptic, and completely excludes air and all germ life. Moreover, it keeps the urine from the wound and from raw or sensitive surfaces.

The object of Hagedorn's[2] method of operating for phimosis is to avoid the disfiguration consequent upon simple fissure of the foreskin or ordinary circumcision. For this purpose the prepuce is only slit just sufficiently to permit its retraction over the glans; a circular strip including both epidermis and mucosa is then excised and catgut sutures applied. Before the latter are knotted, a roll of iodoform gauze is placed on the wound, and the knots are then tied over the gauze. The roll comes away in the form of a hard ring in about a week's time.

REFERENCES.—[1] "Therap. Gazette," Feb. 15, 1894; [2] "Provincial Med. Journ."

CONSTIPATION.

In the case of new-born children regulate the nursing; see that it is done every two or three hours. If the child is not nourished at the breast it may be necessary to feed it from the bottle, and under these circumstances cow's milk should be chosen, which is very rich in cream. A small rectal injection of warm water should be given morning and night at the same hour, and if this is unsuccessful in producing a movement a small suppository of **Coca Butter** may be given, or a few drops of **Glycerine** and water injected. It is also useful to use general massage over the abdomen with camphorated oil. A warm bath should be given every day, and the child should get as much fresh air as possible.

In somewhat older children care should be taken that the diet is regulated and that sweets are avoided, while vegetables, such as beans, prunes, and similar substances. are used. Injections or glycerine suppositories may be used once a day. Before each meal a teaspoonful of a syrup composed as follows may be given :—

℞ Syrup of Rhubarb | Syrup of Gentian āā ℥iv

Or in the morning a teaspoonful of the following prescription :—

℞ Castor Oil | Syrup of Orange Flowers āā ℥vj
Shake well.

Or better still **Cascara Sagrada** cordial, 1 to 3 teaspoonfuls.

In addition abdominal **Massage**, **Baths**, and outdoor life are very useful.

In still older children, in addition to regulating the diet, the child should be taught to eat slowly and masticate its food thoroughly, and in the morning to take a teaspoonful of the following mixture :—

℞ Calcined Magnesia | Cream of Tartar āā ℥vj
Sulphur | Oil of Anise ♏xv

Recourse may also be had to rectal injections and glycerine suppositories, or the following prescription may be given by rectal injection :—

℞ Infusion of Senna Leaves gr. lxxv to gr. cl | Water ℥iv to ℥viij

Should there evidently be marked atony of the liver, once or twice a week a powder composed of **Calomel** and **Scammony**, of each 4 to 6 grains in a small cachet or in syrup, may be used. In still other cases, before the evening meal, a pilule containing $\frac{1}{10}$ to $\frac{1}{20}$ grain of **Podophyllin** may be administered. Where there is insufficient intestinal secretion, **Citrate of Magnesium** may be given once a week, or a small wineglassful of some purgative mineral water. Should there be inactivity of the intestine, 8 to 12 drops of the following prescription may be used :—

℞ Tincture of Nux Vomica ♏xxx
Tincture of Belladonna | Fl. Ex. of Cascara Sagrada āā ℥ij

Hydrotherapy, Exercise, Massage, and **Electricity** with **Faradization** of the abdominal walls and the use of the continuous electric current are also valuable therapeutic aids. Should there be evidences of intestinal obstruction, with stercoraceous vomiting, with constipation, meteorism, and a cylindrical tumour showing obstruction the child should have a hot bath ; after this copious intestinal

irrigation of hot **Boric-acid Solution**, to which is added 1 or 2 teaspoonfuls of **Glycerine**, and if the obstruction does not seem to be severe, 2 to 6 drachms of **Castor Oil**. A liquid diet consisting chiefly of milk flavoured with coffee, is to be used.[1]

A good combination for constipation is **Cascara Sagrada** and **Asafœtida,** but the dose being so variable in different individuals, is sometimes hard to regulate until a few trial doses have been given.[2]

The following is a useful formula for an alkaline aperient[3]:—

℞ Sodii Bicarbonatis	gr. x	Pulveris Rhei	gr. iv
Potassii Bicarbonatis	gr. x	Tincturæ Zingiberis	♏x
Ammonii Carbonatis	gr. ij	Aquæ Menthæ Piperitæ ad	℥j

Misce et fiat mistura. 2 tablespoonfuls three times a day.

REFERENCES.—[1] "Therap. Gazette," August, 1894; [2] "Medical Age," Nov. 25, 1893; [3] "Practitioner," March, 1894.

Synopsis.—(Vol. 1894, p. 169.) For spasmodic constipation, **Belladonna** and **Hyoscyamus** are often helpful, together with **Olive Oil Injections.** In children, Simon advises: ℞ Tinct. Cascarillæ, Rhei, Gentianæ, Cinnamomi, Calumbæ, āā 2 parts; Nux Vom. 1 part. *Sig.*—10 to 20 drops twice daily. Shoemaker advocates the **Continuous Current.**

CONVULSIONS.

J. Madison Taylor, M.D., Philadelphia.

J. Simon[1] divides the treatment of infantile convulsions into four stages: (1,) In the first place the digestive canal should be emptied, as in four-fifths of the cases the convulsions are due to indigestion, or obstinate constipation; a warm enema should be given with **Oil**, **Glycerine,** or **Salt**; (2,) To calm the nervous system, **Ether** or a few drops of **Chloroform** should be given by inhalation; after the enema has acted a clyster containing **Chloral** and **Musk** should be given (8 grains of chloral to an infant of three to six months, 11 grains to an infant of nine months, and 15 grains to one of a year, with 20 drops of tincture of musk) in three or four parts, to ensure its retention and absorption. In addition, a mixture containing small doses of **Bromide of Potassium**, and **Tincture of Musk** should be given every hour or every half-hour; (3,) In obstinate cases, cutaneous revulsives should be used, such as **Mustard Baths** (from one to three) or a **Blister** to the back of the neck, left on for three hours; (4,) In seeking the cause of the convulsions, if indigestion, constipation, and enteritis be absent, search should be made for burns and other sources of cutaneous irritation, foreign body in the nose or ear, hernia, undescended testicle, or retention of urine, but especially for evidence of uræmia. If there be reason to suspect that con-

dition, the treatment prescribed should be **Counter-irritation** over the kidneys, **Hot-air Baths**, **Leeches** to the mastoid process, or **Venesection.** When the attack has passed off the infant should not be considered out of danger until it has passed water freely.

Schumann[2] after discussing the intestinal causes leading to eclampsia and convulsions in children, dwells on our inability to render much active and immediate assistance. Anæsthetics, purgatives, etc., are dealt with, and the author then describes how he has lately in the case of several children resorted to abdominal **Massage**, which led to instantaneous relief. With or without an anæsthetic, according to the nature of the case, the child's abdomen should be rubbed for several minutes, when the passage of flatus and a thin stool will show the success of the treatment. The history should be enquired into first, and, when there is a probability of the presence of peritoneal irritation, the massage may be contra-indicated.

REFERENCES.—[1] "Brit. Med. Journ."; [2] Ibid.

Synopsis.—(Vol. 1894, p. 172.) Removal of visceral irritation; **Cold Douches** to the head, or a protracted stream directed against the fontanelle. When cerebral congestion is present **Leeches** are applied to the mastoid processes, stimulating applications to the lower limbs, or **Compression of the Carotids. Bromide of Sodium** with 7 to 15 grs. **Chloral Hydrate** for young children, or ʒj to jss for older children. Prestly uses hypodermic injections of **Chloral Hydrate**, 5 grs., for an infant two years of age.

CONVULSIONS (Puerperal).

Synopsis.—(Vol. 1894, p. 172.) If albumen be present, an exclusive **Milk Diet** must be insisted upon. If a convulsion sets in and the patient be vigorous and cyanotic, sixteen ounces of blood may be taken, and **Chloral** and **Milk** given as soon as possible.

CORYZA.

The following directions[1] are given for the treatment of acute coryza:

(1,) Confinement to the room.

(2,) Washing of the nose, three times daily, either by snuffing up the medicament, or by irrigation with infusion of **Eucalyptus Leaves**, or simply a glass of water as hot as can be borne, to which is added a soupspoonful of **Carbolic Lotion**, 1 to 20.

(3,) Every two hours, after having blown the nose, a pinch of the following prescription:—

℞ Chlorhydrate of Cocaine	·10	Boric Acid	4
Menthol	·20	Powder of Marshmallow	10
Salicylic Acid	·50		

Make into fine powder.

(4,) If the frontal pain is extremely severe, take three or four times a day a pill made up according to the following prescription :—

℞ Crystal Nitrate of Aconitine gr. $\frac{1}{60}$ | Bromhydrate of Quinine gr. xvj
Licorice Powder q.s.

Make ten pills.

(5,) When there is irritation of the skin, smear the nasal orifice and the upper lip with :—

℞ Vaseline 10 parts | Boric Acid 1 part

Snuffs for acute coryza may be compounded as follows[2] :—

℞ Cocainæ Hydrochloratis gr. jss | Acid. Boracis ℥j
Mentholis gr. ijss | Pulv. Amyli ℥jss
Acid. Salicylatis gr. viij

Mix and reduce to a fine powder. Every two hours a pinch of the snuff may be taken, after blowing the nose.

Or[3] :—

℞ Bismuthi Salicylatis ℥ss | Cocainæ Hydrochloratis gr. $\frac{3}{4}$
Camphoræ Pulverisatæ ℥j

Make a fine powder to be used as a snuff.

The following simple remedy[4] is reported as very efficacious : A ripe **Lemon** is taken and some of its juice squeezed into the palm of the hand. The juice is then forcibly inhaled up the nostrils. Two or three such inhalations are said to cure an ordinary cold.

REFERENCES.—[1] "Therap. Gaz.," Feb. 15, 1894 ; [2] "Med. Press," Feb. 28, 1894 ; [3] "Practitioner," Jan. 1894 ; [4] "Med. Press," Jan. 1894.

Synopsis.—(Vol. 1894, p. 173.) Auld gives a mixture of **Gelsemium** fluid extract, 10 drops to 3 ounces of water, a teaspoonful being taken every fifteen minutes. Seiss drops into each nostril 3 to 5 drops of 5% **Cocaine Solution**, and then sprays them out with an antiseptic, *e.g.:* ℞ Listerine, ℥iv; Ac. Borici, gr. 20; Aq. Rosæ, ℥iv ; M. *Sig.*—Use in an atomizer; or after establishing nasal respiration by the foregoing steps use: ℞ Menthol, gr. iij ; Camphor, gr. v ; Albolene (or Paroleine), ℥j ; M. *Sig.*—Use in an atomiser ; give at bed-time $\frac{1}{12}$ to $\frac{1}{2}$ gr. **Morphia.** Capitan uses a **Snuff**: ℞ Salol, gr. 15 ; Salicylic Acid, gr. 3 ; Tannin, gr. 1½ ; Boracic Ac. (Powder), gr. 60. This produces eczema of nostrils if used too long, unless a little **Talc** or powdered **Boracic Acid** be added, or the Salol is reduced to 4—7½ grs. Another snuff formula is : ℞ Morphinæ Hydrochlor., gr. ij ; Pulveris Acaciæ, ℥ij ; Bismuthi Subnitratis, ℥vj ; M. et ft. pulv. Not more than a quarter of this quantity to be used in twenty-four hours.

CRETINISM. (See also "Idiocy.")

Synopsis.—(Vol. 1894, p. 174.) Carmichael effected improvement by injecting 10 ♏ **Thyroid Extract** twice a week for six weeks, then reduced it to 10 ♏ weekly, and finally to 10 ♏ every two weeks. He then gave half a lobe of the raw gland internally, increasing to one lobe weekly.

CROUP.

Kohn[1] highly recommends the internal use of **Calomel** in true croup.

To a child under two and a half years ·05 gramme of pure calomel is given hourly sleeping and waking ; for each year above two and a half years add ·02 gramme of calomel to the hourly dose. A child of five years, would, therefore, take ·01 gramme of calomel every hour. The calomel must be absolutely pure and undeteriorated ; it should be given without the admixture of sugar of milk or of any sugar whatever ; it may be administered either floating on a teaspoonful of water, or, if the child refuses this because he knows it to be medicine, it may be given in milk, entirely unnoticed by the patient.

After 1 or 2 grammes of calomel have been given, a change in the laryngeal breathing sound should be noticed. The treatment should and can be instituted at the earliest possible moment after the diagnosis is made.

Severe diarrhœa has also been very rare. Three, four, or even five movements a day under the calomel therapy should be advantageous in this disease, provided the patient take nourishment ; the sepsis is, to a certain degree, mitigated by the free action of the bowels.

Should the diarrhœa assume a severe or alarming character, the dose of calomel may be diminished, or the intervals between doses prolonged, or a **Starch Injection**, with or without a little **Paregoric,** may be given ; and if the laryngeal obstruction seems to be lessening, the calomel should not be stopped altogether under any circumstances.

The action of calomel in croup, given as above described, bears out the old belief in actual experience. Under its use the stridor, the aphonia, the cough, in short, all the symptoms, slowly abate, showing that the membrane is gradually loosening its hold and becoming innocuous.

The advantages of calomel over sublimate are self-evident ; the former is mild, non-irritating, can be taken for the necessary length of time without any other effect than a passing diarrhœa, perhaps, while the sublimate is a pronounced irritant poison, which, taken in frequent doses, will cause pronounced gastro-intestinal irritation, necessitating an interruption in the treatment at a critical period.

Discussing the differential diagnosis of membranous croup and diphtheria, Dr. Dicky[2] emphasises the necessity of determining the direction in which the membrane advances. In diphtheria it advances upwards, beginning with a very small area, usually the tonsils, finally reaching the nostrils, and death results as a result of systemic infection. In croup it passes downwards, invading trachea and bronchi, and unless arrested in its progress the patient dies from asphyxia. Again, in croup the exudate is upon the mucous membrane, does not reach down into the

submucosa, and when removed (which can be easily done) there is no raw bleeding surface left; neither has the Klebs-Löffler bacillus ever been found, since croup is not contagious. An organism morphologically similiar may be found, but it will not produce the ptomaines that would identify it as the microbe of diphtheria.

Dr. Dicky has never been able, after most careful examination, to find a single case in which albumen was not present in the urine of a diphtheria patient. It is absent, however, in the sufferers from croup.

His advice in treating croup is to maintain a warm room, the air saturated with moisture; an emetic of **Turpeth Mineral**, repeated whenever the respiration becomes embarrassed; if the bowels are constipated, a sufficient amount of **Calomel** to move them thoroughly; ice to the throat, either in a rubber bag or bladder; if thirst exists, pellets of ice internally; **Quinine** to the production of decided cinchonism, which is to be maintained; a sufficient amount of **Hydrate of Chloral** to allay irritation of the air passages, along with decided doses of **Belladonna** (℞ Chloral Hydrat., gr. j; Tinct. Belladonna, gtt. v--x; given every three hours until four or five doses are taken); inhalation of steam, medicated or not as may suit the peculiar belief of the individual practitioner; all to be supplemented by the administration of a suitable amount of easily digested food.

Intubation and Tracheotomy save 40 per cent. in the case of the former, 35 per cent. in the case of the latter operation.

Dr. Dicky maintains that the use of **Chloral** (though apparently contra-indicated) gives relief by allaying spasms and quieting the nervous system. **Peroxide of Hydrogen, Lime Water** and **Bicarbonate of Soda** are mentioned as solvents of the membrane, but greater importance is attached to the **Hot Spray** which is employed as the vehicle for these applications.

References.—[1] "Therap. Gaz.," Feb. 15, 1894; [2] "Med. Age," Jan. 10, 1894.

CROUP (Spasmodic).

Synopsis.—(Vol. 1894, p. 174.) Gillette prescribes: ℞ Dover's Powder, gr. iv; Cherry Laurel-water, ℥j; Simple Syrup, ℥j; a coffeespoonful every hour. If this fails, a rectal injection of **Chloral Hydrate**, 8 grs.; **Infusion of Valerian**, 2 ounces, may be given and repeated if necessary. In obstinate cases the following solution may be sprayed by an atomizer into the mouth: ℞ Hydrochlorate of Cocaine, gr. ℈ss; Bromide of Potassium, gr. xv; Bitter-almond Water, ℥ss; Distilled Water, ℥vj. Watkins administers **Tincture of Iodine**, ½ ♏ doses every fifteen minutes at first, and then every two or three hours.

CYSTITIS.

Vigneron[1] has found intravesical injections of **Antipyrin** an excellent remedy for pain in the bladder in many cases of cystitis. It is important that the bladder should not be in a condition of over distention. Before washing out the viscus an injection of 10 to 20 grammes of a 1 in 25 solution of antipyrin is made into it; this is left in the bladder for about ten minutes, so as to allow time for the drug to be absorbed. When the bladder is distended the practitioner should, in order not to prolong the operation, content himself with injecting (after washing out), from 60 to 120 grammes or more of a 1 in 100 or 1 in 200 solution of antipyrin, and leaving it in the bladder. Vigneron states that the drug is quite harmless in the bladder even when the use of it is prolonged for months. When left in the bladder the remedy checks the painful contractions; it also acts as an antiseptic.

Wittzack[2] employs the following formula in the treatment of tubercular cystitis, holding that the **Lactate of Cocaine** greatly lessens or entirely relieves the pain incident to the employment of the lactic acid:—

R Lactate of Cocaine 2 parts | Lact. Acid and Dist. Water 10 parts

After having emptied and washed out the bladder, about 15 drops of the solution are applied to the ulcerated spot.

Corrie[3] uses **Chloride of Ammonium** in catarrhal conditions of the bladder. He employs a capsuleful of pulverized purified ammonium chloride taken three or four times in the twenty-four hours, preferably when the stomach is somewhat empty, each dose to be followed immediately by a half goblet or a goblet of pure cold water.

The following are some of the conditions in which the drug has been given faithful trial, with most satisfactory results in *every instance*.

Cystitis dependent upon stone in the bladder, stricture, hypertrophy of the prostate, deposits of urates, etc., gonorrhœa (male and female).

Cystic irritation from uterine disease or menstrual disorders, malarial effects, masturbation, early pregnancy, simple urethritis (traumatic) in newly-married women.

Cystic and renal sequelæ of *la grippe*.

In the majority of cases it was surprising to note the rapidity with which the urine was cleared of bladder mucus, blood-corpuscles, pus-corpuscles, urates, phosphates, etc., the distressing symptoms disappearing therewith, and in no case did the salt occasion any gastric or other disturbance when taken as ordered.

No explanation of the *modus operandi* of the remedy is offered.

Only practical experience is here given, with the sincere hope of aiding those whose opportunities have been limited in the treatment of the diseases of the genito-urinary organs.

Fill the capsules only as needed for administration, as the salt dissolves the gelatin in a short time.

Dana[4] recommends the use of **Thuja Occidentalis Tincture** in uncomplicated cystitis. It is given in 5-drop doses every three hours, and great relief is reported from its use.

For chronic cystitis[5] :—

℞ Liquoris Potassæ Infusi Uvæ Ursi	♏xxx	Infusi Buchu	āā ℥j

Misce et fiat mistura. 4 tablespoonfuls four times daily.

REFERENCE.—[1]"Brit. Med. Journ."; [2]"Therap. Gaz.," August, 1894; [3]Ibid., February 15, 1894; [4]"Chicago Med. Times"; [5]"Practitioner," November, 1893.

DERMATITIS HERPETIFORMIS.

T. Colcott Fox, M.B.

Rosenthal,[1] presented a patient whose condition had been greatly ameliorated by **Antipyrine** internally, and locally by **Tar Baths** and ointments such as **Salicylic, Vaseline**, etc. The patient exhibited the four chief characteristics of the disease, viz., polymorphism of eruption, intense itching, long duration with successive outbursts, and good general health.

Neuberger at the Dermatological Section of the Nuremberg Congress stated that he had obtained very favourable results by the use of **Arsenic** internally, and the application of an 80 per cent. **Salicylic Paste,** but particularly from rubbings with tar made in warm baths.

Lustgarten and Allen,[2] ascribed good results in a case to **Pilocarpine.**

REFERENCES.—[1] Berlin Derm. Soc.; [2] New York Derm. Soc.; 1894.

DIABETES.

Synopsis.—(Vol. 1894, p. 179.) **Phosphoric Acid** quenches the thirst best. In diabetes resulting from excessive sugar formation, Harley advises **Opium, Morphine, Codeine, Hyoscyamus, Cocaine, Bromide of Ammonium** and other narcotics. **Croton Chloral** may be given: ℞ Croton Chloral, gr. ½; Opii, gr. j; Ext. Aloes Barb., gr. ½; Ext. Gentianæ, gr. jss; M. *Sig.*—1 pill thrice daily. In cases due to nerve depression or pancreatic disease, **Ext. Nuc. Vom.**, gr. ¼, thrice daily with a **Croton Chloral** combination is useful; **Strychnine, Quinine, Mineral Acids**—specially **Phosphoric** and **Nitro-muriatic**—are of service. **Antipyrin** and **Peroxide of Hydrogen** have been of benefit. **Aleurone Bread** and **Soya Bread** are useful substitutes for ordinary bread. Mackenzie and Wood speak well of **Pancreaticus** and **Zymin** in treating diabetes mellitus.

Syzygium Jambolanum is disparaged by Leoni, except as palliative. Piatkowsky tried **Benzosol** or **Benzoyl-guaiacol** in a daily dose under 4 grammes with some good results. Dujardin-Beaumetz orders a glass of **Vichy Water** immediately before breakfast and dinner, dissolving in it one of the following: R Lithium Carb., ʒijss, divide in pulv. 30 and add 2 drops of Fowler's solution to each powder. For excessive polyuria he gives **Antipyrin**, gr. 15, in **Black Coffee** after each meal. The body is to be sponged each morning with warm water, followed by active friction. After each meal rinse the mouth with the following mixture: R Ac. Borac., ʒvj; Ac. Carbol, gr. xv; Thymol, gr. iij; Water Oij; M. Or: R Tincture of Anise, ʒijss; Essence of Peppermint, gtt. x; Alcohol (90%), Oj; Tincture of Cochineal to colour, q.s. Mix this with equal parts of water. Nicolaier gives **Salol**, 30 gr. doses thrice daily, if no albuminuria exists. Bufalini finds that **Thymol** increases the tolerance of albuminous food. For excessive thirst the following may be of service: R Pilocarp. Nitrat., gr. iij; Sp. Tenuioris, ʒj; Aq. ad, ʒss. *Sig.*—Four or five drops on the tongue twice or thrice a day.

DIARRHŒA.

Lauder Brunton[1] considers that morning diarrhœa is due to an irritable condition of the sigmoid flexure, or even of the rectum, which may vary from chronic congestion to actual ulceration. In the great majority of cases there is tenderness on pressure over the sigmoid, which may feel hard and contracted like a rope under the finger. In its treatment it is important to abstain from all liquids after five, six, or seven o'clock at night, or even earlier in the day. **Bismuth** and **Soda** with **Carminatives** assist in lessening the irritability. In obstinate cases **Massage** is the most useful remedy. The local application of ointments, *e.g.*, **Bismuth** by means of an ointment introducer is often a useful accessory measure. In many cases the use of an exclusive milk diet is followed by the best results.

That form of diarrhœa coming on while taking food or immediately after is answered by Brunton to be due to increased excitability of the nervous system of the intestine, the impulse given to the stomach causing increased peristalsis along the entire canal. For this condition **Liq. Arsenicalis**, 1 or 2 drops immediately before the meal, is advised, or **Bismuth** may be substituted with advantage, *e.g.*, liq. bismuthi et ammonii citratis ʒss—j.

The following table is given and may serve as a useful basis for diet in malignant disease, simple ulceration or stricture of the lower bowel, also for cases of gastric ulcer :—

TABLE.

Swallow nothing that has not been either passed through a hair sieve, or has been so thoroughly masticated in the mouth that it is of the consistence of cream, and would readily pass completely through a hair sieve without leaving any remainder.

To Avoid—

All Skins—Bones—Strings, and Stones.

Where these things cannot be removed the article of diet must be rejected.

Skins of Fruit, *e.g.*, of grapes, peaches, apricots, gooseberries, marmalade. Reject currants, raisins.

Skins of Vegetables, *e.g.*, tomatoes, potatoes. Reject peas, beans.

Skins of Fish of all kinds. Reject sardines, whitebait,

Skins of Fowl.—Fowl, game, larks, quails.

Bones of Fish, *e.g.*, sardines, herrings, trout. Reject whitebait.

Strings in Fruit.—Oranges, peaches, apples, pears, bananas, tamarinds, mangoes.

Strings in Vegetables, *e.g.*, asparagus, cabbage, cauliflower. Reject carrots, and turnips unless mashed and passed through a sieve.

Strings in Meat.—Stringy fibres of beef, sinews in larks, quails, fowl and game.

Stones or Seeds of Vegetables, *e.g.*, tomatoes. Avoid peas and beans, unless carefully chewed.

Stones or Seeds in all kinds of Fruit.—Grapes. Reject nuts, almonds, strawberries, raspberries, currants.

Strawberries, raspberries, or currants may be pulped either alone or with sugar or cream, and may be passed through a fine sieve. The juice thus obtained may be taken either alone or with farinaceous food.

May Have—

Milk with soda water or lime water, or even alone, if sipped and eaten with rusk or biscuit, and well mixed in the mouth.

Bread if stale; new bread to be avoided. All bread that breaks down under the finger and thumb, into crumbs, is old enough. Bread that under the finger makes a stiff dough must be avoided.

Rusk, or biscuit, or cracker, or bread and butter (not crust), provided it be well chewed in the mouth, so that it is of the consistence of cream before it is swallowed. Eggs in any form except hard-boiled or fried.

Generally the patient may have anything (fruit, vegetables, meat, fish, or game) that has been passed through a sieve.

All kinds of corn-flour, tapioca, sago, rice, if well boiled and well chewed.

Macaroni, vermicelli, spaghetti, sassagna, Italian paste. (These may be boiled in stock which may be made with vegetables, if the vegetables are strained first. Essence of celery in quarter to one drop as flavouring.)

Cocoa, freely.

Tea (China), infused for short time.

Coffee, if it cause no distress.

Butter in moderation.

Cream cheese, in small quantity, and well mixed with bread in the mouth, or grated parmesan, but must *not* have any other kind of cheese. (*No Stilton Cheese*)

Gravy from any kind of meat.

Savoury jellies (if there are no solids in them).

Sponge biscuits.

Madeira cake (*plain, no currants, no peel*).

Grated meat, tongue, etc.

Toast, if it be well masticated.

(*No hot buttered toast.*)
Yorkshire (batter) pudding, with gravy, if well masticated.
Bread or toast in soups.
Honey or golden syrup.
The syrup of jam or marmalade with the seeds or skins strained out carefully; fruit jellies, *e.g.*, apple jelly, quince jelly, guava jelly, with bread or bread and butter, or with any kind of corn-flower or arrow-root, or macaroni, or any kind of farinaceous food allowed.

Dr. K. Hugel[2] of Würzburg has recently carried out a large number of observations on the value of the white **Guava** plant, (*Psidium pyriferum*) in diarrhœa and cholera nostras. The astringent virtues of the plant are recognized both in Java and in the Brazils, where the natives use it as a household remedy. The preparation employed by Dr. Hugel was an infusion made from 5 parts of the leaves and 80 parts of boiling water, with the addition of 20 parts of syrup. Of this a tablespoonful was ordered hourly or every two hours, according to the gravity of the case. For children, of course, a smaller dose was prescribed. Sometimes, instead of the infusion the leaves in powder were ordered, the quantity in each powder being from 8 to 15 grains. After using this remedy in several hundred cases of infantile cholera, Dr. Hugel became convinced of its superiority over all ordinary remedies for acute gastro-enteritis. After three or four doses had been given the most severe cases of diarrhœa and vomiting showed a decided improvement. In five cases of cholera nostras in the adult, the vomiting, diarrhœa, cramps, and drowsiness rapidly disappeared after the administration of ½ a grain of **Calomel**, followed by a few doses of guava infusion. In the chronic diarrhœa of phthisis and in the diarrhœa of typhoid fever this remedy also proved useful; also in dyspepsia, and in chronic gastric and intestinal catarrh. In all Dr. Hugel's experience he never met with any case in which guava produced any disagreeable effects. He has not himself had an opportunity of trying it in true cholera, but he understands that it is used in that disease by the natives of Java.

Dr. Bourget[3] presents his studies upon **Salacetol** as a remedy for diarrhœa. The drug is a combination of salicylic acid and acetol, and possesses all the chemical and physiological properties which make salol an intestinal disinfectant of the first rank. It is a white crystalline powder, insoluble in cold water; is first decomposed in the alkaline fluids of the small intestine; the salicylic acid accomplishes the asepsis and the acetol is rapidly eliminated as acetone. This remedy contains 75 per cent. of salicylic acid, against the 60 per cent. of salol. It apparently eliminates the salicylic acid more rapidly in a solution of castor oil, because the latter provokes a more

abundant secretion of the intestinal fluids. He has treated a large number of infectious diarrhœas, and on only one occasion was he obliged to resort to laudanum. The dose is 30 to 45 grains in one ounce of castor-oil, taken in the morning, fasting. Rarely is it necessary to be repeated on the following day, although no inconvenience results should it be repeated. Under this dosage the sulphur compounds (indican, cresyl-sulphates, skatoxyl sulphate) are diminished and reach their normal (one-tenth of the simple sulphate) within three or four days, showing that disinfection is rapid.

For chronic diarrhœa[4] the following is recommended :—

℞ Salicin ℥ij | Syrup q. s.

Make into twenty pills, and give 1 pill every four hours.

For the green diarrhœa[5] of infants, the following :—

℞ Acidi Lactici Diluti ♏iv | Syrupi Simplicis
Tincturæ Limonis ♏j | Aquæ āā ℥ij

Misce. A teaspoonful thrice daily after suckling.

REFERENCES.—[1] Brunton, "Quarterly Med. Journ.," January, 1894 ; [2] "Lancet," September 8, 1894 ; [3] "Med. Record," December 9, 1893 ; [4] "Journ. de Med.," May 6, 1894 ; [5] "Pract.," April, 1894.

Synopsis.—(Vol. 1894, p. 182.) Arslau uses the **Faradic Current** in all forms except dysentery and ulcerative entero-colitis. Lojkin employs **Lactic Acid** in 2 % solution for diarrhœa accompanying acute dyspepsia, and gives half a tumblerful twice a day. Dantec and Bonamy uses **Chloroform Water** for tropical diarrhœa ; the same remedy also is associated with antiseptic irrigation of the colon for dysentery. Bonamy uses as a clyster in dysentery : ℞ Corrosive Sublimate, gr. j ; Water, ℥xvj. Half to be used at night and half in the morning. Mencke employs : ℞ Powdered Resorcin, gr. xv ; Paregoric, ♏ xv ; Distilled Water, ℥iij ; Syrup, ℥ij. *Sig.*—A dessertspoonful every two hours. Cantlie treats hill diarrhœa with **Zinc Oxide, Sodium Bicarbonate,** and **Rhubarb,** with **Milk Diet.** ℞ Salicin, ℥ij ; Syr. Simp., q.s. ut ft. Pil. xx. *Sig.*—1 pill every four hours for chronic diarrhœa. ℞ Calcii Phosp., ℥ijss ; Tannin, grs. xv—xxx. To be taken during the day divided into 4 to 6 cachets.

DIARRHŒA (Infantile).

Synopsis.—(Vol. 1894, p. 184.) **Lactic Acid** in bacillary and infectious forms. **Mineral Acids,** 1 to 5 drops, twenty minutes after feeding ; **Bismuth,** 20 grs. every two hours, are given to infants at times ; **Opium** to relieve restlessness and pain and control watery evacuations. In functional non-inflammatory forms **Belladonna Extract** three or four times a day with **Kreasote** or some other antiseptic : also **Galvanism** or the **Faradic Current,** 3 to 10 milliampère strength. Hydro-therapeutic measures and local warmth. **Hydrochloric Acid** and **Salol** are used by Mense, and of the latter gr. 5 to 10 were given during the first year ; gr. 15 to 30 for older children. Miller advises **Enteroclysis** for summer diarrhœa. **Hot Water** as a flushing medium is given freely to infants in severe cases by McConnell. Talley washes out stomach and intestines with pure water or

Boracic or **Thymol Solution**, then giving **Calomel**, 1 to 2 grs. daily, or **Salol**, 1 to 4 grs. in fractional doses. **Arsenic**, $\frac{1}{200}$ to $\frac{1}{100}$ gr. or **Fowler's Solution**, $\frac{1}{4}$ to 1 drop, is indicated by constant tendency to relaxed bowels. **Corrosive Sublimate**, $\frac{1}{600}$ to $\frac{1}{100}$ gr. t. i. d. in mucous diarrhœa. **Podophyllin**, gr. $\frac{1}{20}$ to $\frac{1}{10}$ sec. horis in serous forms. Chapin finds the addition of **Hydrogen Peroxide** to milk is a harmless and effectual preservative method; 1 to 2 % is used.

DIPHTHERIA. (See also special article, "The Diphtheria and Tetanus Antitoxines.")

Levy and Knopf[1] have employed locally a combination of **Papayotin** and **Carbolic Acid**, especially as the latter does not prevent, though it retards, the digestive power of the former. Their idea was that the papayotin would exert its solvent action on the membrane and so enable the acid to penetrate. Again, the carbolic acid would destroy the bacteria, while the papayotin would weaken the specific poison.

A solution is made up as follows:—

℞ Papayotin (Gehe) 10 parts | Distilled Water 100 parts
Carbolic Acid (pur. liq.) 5 parts |
M. Sig.—Shake before using.

During the first two hours it was painted on the membrane every ten minutes, subsequently at two-hour intervals, and as far as possible also during the night. The improvement was nearly always immediate and striking. Cases of diphtheria with thick, false membrane and slight infiltration of the subjacent tissue responded better to treatment than those with much infiltration and thin membrane.

In conclusion, the authors state that they have been experimenting with the non-poisonous **Thymol**, in 2-per cent. solution, as a substitute for the carbolic acid, and have obtained similar results.

Hamilton[2] in cases of pharyngeal diphtheria advises **Biniodide of Mercury**, as follows:—

℞ Mercury Biniodide gr. ij | Sugar ℥j
Oil of Peppermint ♏ij |
M. Sig.—Place from 5 to 10 grains in powder every hour or two on the tongue, not giving any water for a few minutes afterwards.

The author advises that if laryngeal or tracheo-laryngeal symptoms develop, a quart of unslaked lime should be placed in a vessel of appropriate size and half an ounce of turpentine poured on it, then enough boiling water to completely cover the lime; the vessel should be placed under a cotton sheet, thrown also over the head of the nurse and affected child. A cloud of vapour will be emitted for ten minutes at each sitting, which can be repeated hourly, if required, for the paroxysms of difficult breathing.

REFERENCES.—"[1] Therap. Gaz.," Dec. 15, 1893; [2] Ibid., Aug. 15, 1894.

Synopsis.—(Vol. 1894, p. 190.) ℞ Pilocarpin, gr. ½; Sp. Vin. Gall., ʒiv; Syrup. Aurant., ʒj; Aq. q. s. ad ʒiij. *Sig.*—1 teaspoonful every two hours after a strong purge has been used (Heischfeld). **Chloride of Iron**, 4 parts to 1 of Water, painted on the throat twice daily, sprinkling also with lime water and using ice pellets and an ice bandage about the throat (Hübner and Rosenthal). Simon applies: ℞ Salicylic Acid, gr. xv; Infusion of Eucalyptus, Glycerine, āā ʒiss; Alcohol, q. s. to make a solution, following its application by painting with **Iron Perchloride** and **Glycerine**, equal parts, and irrigating mouth and nose with **Boric Acid Solution** or **Carbolic Acid**, 1 to 100 solution; **Nitrate of Silver Stick** is applied to any fissures of lips or gums. Kraus uses **Iodum Tribromatum** (20 drops to 300 grains of water) for a gargle, watching for iodism. Jacobi considers peroxide of hydrogen too irritating for local use. Smith considers this irritation is lessened by adding **Sodium Bicarbonate**, *e.g.*: ℞ Squibb's Peroxide of Hydrogen, ʒij: ℞ Sodii Bicarb. gr. x; Aq. dest. ʒij: ℞ Aq. dest. ʒij. 1 teaspoonful of each to be mixed in the hand atomizer just before using it. Fischer uses **Pyoktanin** in 10 % solution, locally administering a teaspoonful of **Sod. Bicarb.** in a tablespoonful of water five minutes before each application. Schwarz treats suspicious cases at once with **Sodium-Sozoiodol**, gr. 45; **Sublimated Sulphur**, gr. 180. This is blown into mouth and nose every three hours in children under three years. Up to five years old a 50% mixture is given, and above this pure **Sodium-Sozoiodol** is given. At the same time a tablespoonful of **Pot. Chlorat.**, 15 to 22 grs. to 6 fl. oz. water, is given, and to support the heart a decoction of **Cinchona** with **Cognac** or **Malaga Wine** is used; for swelling of glands inunction of **Mercurial Ointment**. In bad forms with retention of urine, large doses of **Calomel** were used. Howatson adopts regular brushing with **Tinc. Ferr. Perchlor. Quin. Sulph. Glycerine** in solution, and internally: ℞ Liq. Hydrarg. Perchlor., ʒiv: Pot. Iodid., gr. xv; Tinc. Nuc. Vom., ♏ xxxij; Glycerin., ʒj; Aq. Anethi ad ʒiv. *Sig.*—2 teaspoonfuls every two and a half hours night and day. Lescure brushes on **Chromic Acid**, 2 grms., to **Distilled Water**, 5 grms., removing any excess, and following with applications of **Tannic Acid**, 6 grms. to 30 grms. **Glycerine**. Internally: ℞ Tinct. Eucalyptus, 3 to 10 grms.; Mucilage of Acacia, 90 grms.; Syrup of Orange, 30 grms.; M. *Sig.*—To be taken during twenty-four hours in tablespoonful doses; or: ℞ Tinc. Nuc. Vom., 10 grms.; Ext. Cinchon., 5 grms.; Malaga Wine, 200 grms.; Syr. Aurant., 100 grms. *Sig.*—3 dessertspoonfuls per day. In adults: ℞ Quin. Sulph., gr. ij; Liq. Hydrarg. Perchl., ♏ x; Tinc. Aurant., ♏ x; Aq. ad ʒj: M, *Sig.*—Shake the bottle and give 2 tablespoonfuls thrice daily. Bonain advises **Essence of Turpentine**, 150 to 500 gr. to be evaporated daily and water to be vaporised under a tent until the child is cured. Internally Kersch uses: ℞ Sod. Salicyl., 5·0; Pot. Iodid., 5·0; Aq. dest., 200·0; Syr., 30; M. A tablespoonful every hour. Flahaut applies crude **Petroleum** every hour or two hours.

DROPSY. (See "Ascites.")

DYSENTERY.

Dr. Schwarze[1] observed the success following the treatment of chronic diarrhœa and dysentery by the empiric practitioners of Constantinople, whom he found were in the habit of using chiefly **Roses**, the rind of the **Pomegranate Root**, and **Myrobalanus** – the latter being

the fruit of a tree indigenous to India. He employs a combination of myrobalanus, pelletierin, extract graminis, extract granati and acacia ; the first mentioned has, however, to be very carefully selected and its purging principles removed by a complicated process. He reports great success attending this treatment in the hands of his colleagues at home and abroad as well as his own.

Dr. Summers[2] washes out the bowel with a strong solution of pepsin (½ ounce to 6 ounces of warm water) every three hours, which act, he declares, "clears off the mucous surface effectually." He next employs a soothing injection, such as **Laudanum** and **Starch,** as hot as can be borne. He says that after two or three washings and injections the patient experiences great relief, and healthy action is at once set up, when, if constitutional conditions receive due consideration, rapid healing follows.

Rudneff[3] uses **Lysol** enemata. A 1 per cent. aqueous solution is injected three times a day (a pint at a time) into the bowel until all blood disappears from the stools. Subsidence of pain and general improvement were said to result on the second or third day after the adoption of this method.

A useful injection in dysentery[4] is said to be the following :—

℞ Boric Acid	ʒss	Tincture of Opium	gtt. xv
Tannic Acid	gr. xlv	Water	Oj

To be given after a dose of castor oil for the purpose of washing out the bowel.

REFERENCES.—[1] "Therap. Gaz.," Dec. 15, 1893 ; [2] "Med. Age," May 10, 1894 ; [3] "Meditzinskoië Obozrenïe," No. 20, 1893 ; [4] "Therap. Gaz.," Aug. 15, 1894.

Synopsis.—(Vol. 1894, p. 197.) Daland treats the malarial form in adults with **Quinine**, gr. 6 o.m.n., and : ℞ Ammon. Chlor., gr. 5 ; Pulv. Ipecac., gr. 5 ; Tr. Opii, gtt. 10 to 15. *Sig.*—To be repeated every two hours. **Morphine** is added for severe pain, and where debility is marked **Ammon. Carb.**, 5-gr. doses, every two hours day and night is used. For endemic forms in Nicaragua, **Quinine**, gr. 10 to 20, is given three times daily, and to allay gastric irritability **Bismuth**, gr. 15, or **Tannin**, gr. 5, is given instead of the above ammonium and ipecac. mixture. In some cases **Nitrate of Silver**, gr. ⅛ to ¼, in pill 3tis hor., or **Plumb. Acet.**, gr. 2 or 3, 3tis hor. is useful. **Ammonium Carbonate**, gr. 10, with either of the red or white wines every three hours is a better stimulant than spirits. Liebersohn employed enemata of **Tannin** and **Boracic Acid** at 36° C. every three hours. Lojkin advocates **Lactic Acid**, ½ a tumblerful of 2% solution twice daily. Rovacs has used **Quinine Irrigations** (1 in 1000).

DYSMENORRHŒA.

Schwarze[1] emphasises the undesirability of narcotics. He attaches importance to the use of the gymnastic, mechanical treatment of the disease, introduced by Thure-Brandt. It is applicable to non-inflam-

matory cases. The movements which Thure-Brandt recommends are : (1,) Percussion of the loins ; (2,) Rolling of the thigh ; (3,) With the patient in a standing position, the knees are bent and stretched against her opposition ; (4,) Rolling of the feet ; (5,) Separating the knees and leaning backwards. The movements are performed at home, if possible daily, at any rate daily for one week before menstruation. Favourable results follow this treatment. Schwarze asserts that patients who dance or ride horseback some days before menstruation have much less pain, or none at all.

But in well-developed, non-anæmic women, who suffer violently from dysmenorrhœa, special gymnastics are not to the purpose. Here, in non-inflammatory cases, **Viburnum Prunifolium** gives brilliant results, which are not to be obtained with any other remedy, except morphine.

Viburnum prunifolium, fluid extract, in teaspoonful doses thrice daily for from five to seven days before, and continued during the menstruation, gives excellent results without unpleasant after-effects. It is not so successful if an inflammatory condition is associated with this symptom. He has noticed, also, its value in arresting threatened abortion, even after the dilatation of the os uteri has been established. In many cases local massage is of great value, but it should only be employed in those who are not erotic. The use of a uterine sound before menstruation is frequently followed by relief, and of still more value is dilatation of the entire cervical and uterine canal. Electricity —galvanic current, aluminium negative pole in the uterus, large positive pole upon the abdomen, current of from fifty to sixty milliampères—has been of service in many cases. Castration is not indicated from the standpoint of the gynæcologist alone, but only after consultation with the neurologist and alienist.

Bergey [2] prefers **Santonin** over all other drugs as an emmenagogue, and to relieve painful menstruation. He gives 10-grain doses at night on the first appearance of the flow.

REFERENCES.—[1] "Therapeutische Monatshefte," 1894, Heft 5, S. 191 ; [2] "The Therapist."

Synopsis.—(Vol. 1894, p. 199.) Oliver prescribes a large dose of **Bromide** at night for a week midway between the periods, and **Antipyrin**, gr. 5, hourly until 6 doses are taken when there are indications of the period approaching. If pains depend upon gastro-intestinal conditions, a mixture containing **Chloride** or **Hypophosphite of Calcium** is given in the intermenstrual period. Smith advises attention to habitual constipation, improvement of pelvic circulation by **Hot Douches** and **Boro-Glyceride Tampons** ; **Rapid Dilatation** ; **Curetting**, with or without the use of intra-uterine tampon ; **Pessaries**, with or without intra-uterine stem ; external application of **Galvanic Current**, or the same with one pole in vagina against uterus and the other in abdomen or sacrum ; as most im-

portant he uses a mild Galvanic Current to the interior of the uterus by means of the ordinary uterine sound; rapid dilatation; application of a mild caustic to interior of uterus and drainage either with iodoform gauze or with vulcanite or glass stem or tube to remain some time. Handfield-Jones would remove inflammatory conditions by Leeching, Saline Aperients, application of Carbolic Acid or Iodised Phenol and Hot Douching; if no disease exist but simple tenderness, Rapid Dilatation is curative. Berger gave Santonine, 10-grain dose at night on the first indication of the period, and found it always relieved uterine colic. Forez irrigates the large intestine with Hot Water to which Alkaline Salts may be added. O'Sullivan successfully employed Hyoscyamine, grain $\frac{1}{60}$, increased to $\frac{1}{30}$.

DYSPEPSIA. *W. Gilman Thompson, M.D., New York.*

The chief interest in the treatment of dyspepsia has during the past year centred in the use of antiseptic, or, rather, aseptic and antifermentative remedies, among which **Salol** still holds the foremost rank for treatment of intestinal dyspepsia, and **Salicin** for purely gastric indigestion. These remedies control, not only abnormal fermentation of saccharine and amylaceous foods, but also that of animal foods, such as milk. In the intestinal indigestion with flatulence and discomfort, which is apt to accompany the prolonged use of an exclusive milk diet, *e.g.*, in enteric fever, salol given in 5-grain doses every two or three hours is particularly beneficial.

Sympson[1] publishes an interesting paper on the value of salol in intestinal dyspepsia and other disorders, in which he gives the results of both experimental and clinical observation.

For the Ingleby Lectures of the current year (1894), Saundby[2] chose the topic of "Common Forms of Dyspepsia in Women," and he advocates a very simple and rational treatment. The majority of cases are associated with anæmia and constipation. For the former symptom, he gives the time-honoured **Sulphate of Iron** pill (Blaud's), combined with **Sulphate of Magnesium,** or else the tincture of the **Chloride of Iron,** and for constipation, **Strychnine**, with **Magnesium** or **Sodium Sulphate Waters.** Of the latter, the Rubinat water is the least disagreeable, and most active. It is best given very hot. There is nothing at all new in this method, but the author's presentation of the subject is comprehensive and practical.

For atonic gastralgia, he advocates the following prescription of the British General Hospital Pharmacopœia:—

℞ Ac. Hydrochlorici Dil.	♏ x	Sodii Chloridi	gr. xx
Ac. Hydrocyanici Dil.	♏ v	Glycerini	♏ xxx
Liq. Strychniæ	♏ ijss	Aq.	ad ℥ j

Ft. Ht. Sig.—To be taken thrice daily, an hour after meals.

This is a very bitter draught, the taste of which might better be dis-

guised by some essential oil or other flavour. The forms of treatment for dyspepsia in women, advocated in Saundby's lectures, include a discussion of rest, massage, isolation, climate, diet, exercise, electricity, gastric lavage, and drugs.

Papoid is an all-round solvent and digestant, which, like the pancreatic juice, affects both starchy and proteid foods.

Page[3] finds that it dissolves abnormal mucous secretions, which play so important a *rôle* in exciting mal-fermentation and functional dyspepsia. Its action is continued in the intestine. This agent is strongly endorsed by Stucky and others. The dose is 1½ to 3 grains ter. die after meals. It is prepared in tablet form.

Bismuth Subgallate is a comparatively new salt of bismuth recommended by Austin Flint and others for fermentative dyspepsia. The dose is the same with the older salts of bismuth, and 10 to 20 grains may be given after taking food, but larger doses, 30 to 40 grains, will be required for diarrhœa. It is obtainable in convenient tablets, 5 grains to each tablet.

Djambœ is a new astringent and stomachic recommended by Hugel[4] as a tonic and stimulant to the gastric mucous membrane. The preparations are an infusion, powder, and fluid extract of leaves of the djambœ or *psidium pyriferum*, a plant used extensively by the Javanese, who make an astringent tea of it for the cure of diarrhœa. He declares that it is a perfectly innocuous remedy in doses even up to an ounce of the powder. The drug was given with benefit to patients of the Würzburg University Polyclinic, the following preparations being employed :—

(1,) ℞ Infus. Djambœ (1—16) 80 gme. (2¾ fl. ℥)
Syrup 20 gme. (4 fl. ℥)
Tea-to tablespoonful every one to two hours.

(2,) ℞ Powdered Djambœ 5—10 gme. (75—150 gr.)
Divide into 10 powders. 1 every one to two hours.

(3,) ℞ Fluid Ext. Djambœ 30 gme. (1 fl. ℥)
20 drops to 1 teaspoonful every two hours.

Much has been claimed of late for the alleged antiseptic and antifermentative value of oxidizing agents of the **Hydrogen Peroxide** type, when taken internally. The writer[5] of this article recently reported a series of experiments upon these much-advertised nostrums, which led to the conclusions : (1,) That when used in full strength of 15 volumes per cent. of hydrogen peroxide, they are liable to prove injurious by destruction of the gastric or œsophageal mucous membrane ; (2,) Given in medicinal doses by the mouth, their only benefit, if any, consists in local action in the alimentary canal by possibly preventing

mal-fermentation ; (3.) Ozone is of no value whatever to the tissues, whether inhaled or drunk in fluid preparations, and it may be exceedingly harmful.

Creasote still finds favour as a remedy for gastric and intestinal dyspepsia, especially in cases of pulmonary tuberculosis, where the swallowing of sputum excites constant gastric catarrh, or when the alimentary canal shares in the general lack of nutrition of the body, and dyspepsia, with hypersecretion of mucus, flatulence and eructations, prevails. The later observations on the use of this drug demonstrate that nothing is to be gained by pushing its exhibition beyond the reasonable dosage of 4 or 5 minims three or four times a day. The larger doses, formerly given, are apt to defeat their own end, by causing further derangement of digestion.

Tordeus[6] advocates the following formula for dyspeptic vomiting in children :—

℞ Pure Creasote gtt. ij—iv | Syr. Orange Peel ℥iv
Aq. Dest. ℥j—℥ij |
M. Sig.—A teaspoonful every two hours.

Good beechwood creasote only should be used, and for intestinal dyspepsia the best plan of administration is that suggested by W. H. Flint, three or four years ago, to give the drug in keratin coated pills, which are not dissolved until they reach the strongly alkaline medium of the intestinal contents.

Guaiacol and **Guaiacol Carbonate** are other remedies of this class which have recently been reported favourably by F. C. Simpson[7] and others for gastric and intestinal dyspepsia, but in other hands they have proved much less useful than salol.

Potassium Bichromate in doses of 5 milligrammes to 1 ctg. ($\frac{1}{6}$ to $\frac{1}{2}$ gr.) t.i.d., between meals, is recommended by Fraser[8] for the cure of obstinate dyspepsia with pain and emesis. He used it successfully as an analgesic and antiseptic in eighteen bad cases.

T. H. Webster[9] also speaks favourably of it.

Duboisin is a powerful remedy recently recommended by Cantu,[10] and employed as an anodyne against gastro-intestinal pains, and to counteract hyperacidity of the stomach. The latter it reduces to a remarkable extent. He has used the hydrochlorate in hypodermic dosage of $\frac{1}{10}$ to $\frac{2}{3}$ milligramme ($\frac{1}{6}\frac{1}{0}$ to $\frac{1}{1}\frac{1}{0}$ grain), or by the mouth, $\frac{1}{3}$ to $\frac{1}{10}$ milligramme ($\frac{1}{3}\frac{1}{0}$ to $\frac{1}{6}\frac{1}{0}$ grain). He regards it as superior to atropine in these cases. The greatest care should always be exercised in its use.

Recently the writer[11] called attention to the value of **Banana Flour** as an excellent form of starchy fruit food for dyspeptics, who are unable

to digest amylaceous substances without the occurrence of flatulency, pyrosis, etc. Further trial of this food justifies the original favourable report. It possesses the advantage that, with thorough ripening, the starch of the banana is largely converted into dextrin and an easily assimilable sugar. Most fruits when dried form a gummy or pasty mass, like the fig and raisin, but the banana may be converted into a fine nutritious flour which will keep almost as well as wheaten flour, and which may be cooked in similar ways.

Somatose is a new soluble predigested meat preparation presented in the form of an odourless granular powder, almost tasteless, which contains upwards of 90 per cent. of albumoses, ready for immediate absorption. It is a useful form of nitrogenous food for bad cases of dyspepsia, especially among the aged, for, like Mosquera's beef meal, and similar preparations, it may be advantageously employed to concentrate other forms of nutriment, such as milk, soup, or broth, cocoa, or coffee, in all which it dissolves. It has also proved a serviceable infant food when existing gastric dyspepsia makes the full digestion of other forms of meat, or even of milk, temporarily impossible.

REFERENCES.—[1]Sympson, "Practitioner," 1894; [2]Robert Saundby, "Common forms of Dyspepsia in Women," Ingleby Lectures, 1894; [3]R. C. M. Page, "New York Polyclinic," Dec. 1893; [4]K. Hugel, "Münch. med. Woch," 1894, xli., 569; [5]W. Gilman Thompson, Hydrogen peroxide, and other ozonizing agents, "New York Med. Record," Mar. 3, 1894; [6]Tordeus, "Il Raccoglitore Med.," 1894; [7]F. C. Simpson, "Amer. Therapist.," Aug. 1894, p. 40; [8]T. R. Fraser, "Transact. Internat., Med. Congress," 1894; [9]T. H. Webster, "Dynamical Therapeutics," 1894; [10]Cantu, "Transact. Internat. Med. Congress," 1894; [11]W. Gilman Thompson, "Dietetic and Hygienic Gazette," Feb. 1892, p. 19.

Synopsis.—(Vol. 1894, pp. 13, 24, and 200.) R Ol. Creasoti Pur., ♏ xij; Sp. Tenuioris, ℥ijss; Ammon. Benzoat., ʒij; Glycer. Pur., ʒvj; Infus. Caryophylli ad ℥vj; M. *Sig.*—$\frac{1}{2}$ part in ℥iv aq. two or three times daily between meals for acid eructation, distension and heartburn. **Chloralose** has cured dyspepsia in a neurasthenic. **Oleum Succini**, 10 to 20 drop doses in flatulent dyspepsia.

EAR (Methodical Diagnosis of Diseases of).

J. Dundas Grant, M.D., F.R.C.S.

In the "Medical Annual" for 1894, a somewhat detailed account was given of the methods of investigating the organs of hearing with casual reference to the various diseases whose presence was recognisable by the different methods described. We shall in this paper, assume that the reader is familiar with the use of the tests for hearing, and the instruments required for the examination of the auditory organs.

An endeavour will be made to methodise as briefly as possible the means of arriving at a diagnosis of whatever disease may be present, and though all such semi-schematic methods must be founded on a more or less artificial system of classification, the writer has striven as far as possible, to classify the diseases according to the most prominent marks of distinction or similarity between them. In the first place the grouping is founded upon such subjective symptoms as it is in the power of every practitioner to analyse without having any great familiarity with aural manipulation, and adding, for the purposes of confirmation, a description of the physical changes upon which necessarily the skilled otologist must rely.

We may mention as before, that the cardinal symptoms of disease of the organs of hearing are defective hearing, pain in or round the ear, discharge from the ear, tinnitus aurium, vertigo, or visible alterations in the organs.

We shall in the first place, then, classify the diseases for diagnostic purposes according to these various cardinal symptoms.

If the patient complains of :—

DEFECTIVE HEARING (*see below*).
PAIN IN OR AROUND THE EAR (*see page* 202).
DISCHARGE FROM THE EAR (*see page* 206).
TINNITUS (*see page* 210).
VERTIGO (*see page* 211).
VISIBLE ABNORMALITIES ABOUT THE EAR (*see page* 214).

THERE IS DEFECTIVE HEARING, WITHOUT PAIN OR DISCHARGE.

We have first to determine whether there is obstructive or nervous deafness, or a combination of the two.

A. Bone conduction being normal or increased, Rinné's test giving a negative, and Weber's, a positive result ; there is OBSTRUCTIVE DEAFNESS. (In such cases, there is better hearing for high than for low tones—Galton's whistle—also for the watch as compared with the voice, and, in chronic bilateral cases of severity, better hearing in the midst of a noise.)

(a.) The deafness has occurred SUDDENLY, there is probably *impaction of cerumen*, which is readily detectable by the speculum. This is often a complication of chronic external otitis (*vide* 209), of exostosis of the meatus (*vide* 216), or of other forms of ear disease.

(b,) The deafness has come on ACUTELY, there is probably *acute catarrh of the Eustachian tube.* On inspection, the membrane is much indrawn ; on inflation the Eustachian tube is heard (by auscultation) to be narrowed, and hearing is immensely improved.

(c,) The deafness is of OLD STANDING, then (apart from obvious occlusion of the external meatus) :

I. There being no history of any considerable former discharge :

(1,) If it began with a distinct acute catarrh of naso-pharyngeal origin, and the accompanying tinnitus, if any, is slight, inconstant, and late in appearance, there is the *exudative form of chronic catarrh of the middle ear.* On inspection, the membrane is indrawn and of abnormal opacity or thickening. There are signs of chronic naso-pharyngeal catarrh. Inflation gives evidence of some degree, at least, of narrowing of the Eustachian tube, and produces more or less improvement in hearing. If the improvement on inflation disappears at once on the patient swallowing, there is probably *relaxation of the membrane in whole or in part.* This can only be ascertained by comparing the appearance before and after inflation, or under the action of Siegel's suction-speculum. Depressed parts are made to bulge, and the thin film of membrane, fitting closely over the inner ossicles and allowing their outlines to be plainly recognisable, bulges out away from them and renders them invisible.

(2,) If, on the other hand, the deafness has come on very insidiously, with prominent tinnitus aurium from the commencement, the affection is probably the *sclerotic form of chronic catarrh of the middle ear.* On inspection, the drum may show very little sign of change, but may be somewhat more opaque, or irregularly thickened, and in parts abnormally thinned. There is not necessarily any evidence of naso-pharyngeal disease. Inflation reveals little or no evidence of narrowing of the tube, and produces no notable improvement in hearing. (This is readily intelligible when we remember that the essential element in the disease is a fixation of the stapes in the fenestra ovalis.) Further evidence of the identity of the affection is afforded by the relative insensibility of the membrane when touched with a probe, and of the interior of the tympanum when inflated.

II. There is a history of a former considerable purulent discharge. The deafness is probably due to *perforations or cicatrices resulting from suppurative inflammation of the middle ear.*

(1,) If, on auscultation or inflation, there is heard the unmistakable "perforation sound," there is a *persistent perforation.* On inspection, the perforation is usually recognisable as having white cicatricial

or epidermised edges, parts of which may be adherent to the inner wall of the tympanum.

(2,) If there is no perforation sound, there is a *cicatrised membrane.* On inspection, there may be seen a larger or smaller sharply defined portion of the membrane thinned and covering the area obviously occupied before by a perforation (*vide* p. 206). The cicatrix may be thin, baggy, and so tightly drawn into the tympanum that the appearance is indistinguishable from that of an open perforation, being in fact, like the mouth of a pocket. It is distinguished by the absence of "perforation sound" and by the changes seen under the action of Siegel's speculum. The "pocket" may be drawn completely out, indicating *non-adherent cicatrix*; it may be drawn out in part, say its circumference, the centre remaining behind, as it were at the bottom of a funnel, *partially adherent cicatrix.* Lastly, it may all remain behind, simply becoming congested, *completely adherent cicatrix.*

B. Bone-conduction being diminished or extinct, Rinné's test giving a positive and Weber's a negative result; there is deafness from disease of the sound perceiving apparatus—"NERVE DEAFNESS." (In such cases there is usually better hearing for low than for high-pitched tones, worse hearing in the midst of a noise, and better hearing for speech than for the watch-tick.)

(a,) The nerve deafness has occurred SUDDENLY.

I. Without injury or exposure to noise or explosion.

(1,) It has come on with intense vertigo, tinnitus, vomiting, coldness and almost collapse in a patient with no previous ear-disease. There is *hæmorrhagic effusion into the labyrinth* (*vide* p. 212), constituting what is known as *labyrinthine vertigo* (*Menière's disease*), and leaving protracted and often persistent deafness by which it has to be distinguished from a "bilious attack," which it resembles.

(2.) If the deafness is associated with cross-paralysis, it may be ascribed to hæmorrhage in the pons, if with hemianæsthesia, in the posterior part of the *internal capsule*, and if with hemiplegia, in the opposite *temporo-sphenoidal lobe.*

(3,) If the deafness is unaccompanied by any of the above-mentioned symptoms and signs, and has been induced by a mental shock, it is *neurotic or hysterical deafness.*

II. It has resulted from an injury to the head, or exposure to noise or explosion.

(1,) Forcible syringing, loud sudden noises, or explosions or blows on the head may cause deafness attributable to *concussion of the labyrinth.*

(2,) If there has been a severe blow or fall with the usual signs of fracture of the base of the skull, especially if accompanied by facial paralysis, there is a *fracture of the capsule of the labyrinth.*

(b,) The nerve deafness has had an ACUTE onset.

I. If there is no pyrexia, no marked congestion or anæmia :— The nerve deafness develops within a few hours to a high degree without marked febrile re-action, there is probably then *syphilitic disease of the labyrinth*, acquired or hereditary. Other signs will usually be found, including in hereditary cases the remains of interstitial keratitis, the typical teeth and the peculiar physiognomy. This is the most common form of acute nerve deafness.

II. There being signs of cerebral congestion, the occurrence of slight, though recognisable nerve deafness, with tinnitus, giddiness, and nausea, along with flushing of the face and ear, the deafness passing off with the other evidences of cerebral congestion, would indicate *acute congestion of the labyrinth.*

III. If there is pallor with signs of cerebral anæmia, slight nerve deafness with tinnitus, giddiness, nausea and pallor relieved by lying down, it is due to *acute anæmia of the labyrinth.*

IV. There being great febrile and cerebral disturbance.

(1,) If not preceded by decided meningitis there is *primary inflammation of the labyrinth*, the deafness persisting when the cerebral symptoms have passed off.

α. This in very rare cases is *simple.*

β. More commonly it is *infectious*, being brought about by microbic invasion during the exanthemata, diphtheria, mumps, rheumatic or other fevers.

(2,) If it has been preceded by decided symptoms of meningitis, there is *meningitic inflammation of the auditory nerve* in its intra-cranial or labyrinthine portion. If the sixth nerve is simultaneously affected the *intra-cranial portion* is affected.

(3,) If it has supervened on concussion or hæmorrhage from an injury, there is *traumatic inflammation of the auditory nerve or labyrinth.*

(c,) The nerve deafness has GRADUALLY DEVELOPED during a considerable period of time.

I. There is no evidence of intra-cranial disease.

(1,) The patient has been habitually exposed to noises, such as hammering, firing of guns, machinery, escape of steam, etc., the affection is *paresis from chronic concussion* as typified in "boiler makers' deafness."

(2,) The nerve deafness is developed after repeated losses of blood or other causes of anæmia, local or general. It is worse in the erect

than in the recumbent posture, and is accompanied by humming tinnitus, vertigo, faintness, and the general signs of anæmia ; there is *chronic anæmia of the labyrinth.*

(3,) The nerve deafness has developed in a plethoric subject, and that (and the accompanying tinnitus) is worse in the recumbent posture and after meals, or it accompanies symptoms of cerebral or tympanic congestion ; there is *chronic congestion of the labyrinth.* If *venous*, there is usually a rushing tinnitus, and if *arterial* a pulsating tinnitus, diminished by compression of the vertebral arteries.

(4,) The deafness varies with the patient's nervous condition, coming on with pallor, nausea, vertigo and giddiness, rapidly passing off; the symptoms are those of *neuro-vascular paralysis of the auditory nerve.*

(5,) The nerve deafness has developed in a previously healthy ear, the opposite one being the seat of old ear disease, median or internal ; it is *sympathetic paralysis of the auditory nerve.*

(6.) The nerve deafness has developed during the exhibition of quinine or salicylic compounds continued for a considerable time; there is *toxic nerve deafness.*

II. There is involvement of other cranial nerves besides the auditory.

(1,) The facial nerve is completely paralysed.

α. There being a history of long standing discharge ; there is *disease of the auditory and facial nerves in the petrous bone*, probably tubercular.

β. With no history of discharge, there is disease involving the *intracranial course of the auditory and facial nerves* (tumour, gumma, pachy-meningitis, etc.)

(2,) The sixth nerve being paralysed, a history of convulsions, etc., would point to *basal meningitis.*

(3,) The spinal accessory nerve being paralysed ; this would indicate *disease on the posterior aspect of the apex of the petrous bone*, probably tumour or pachy-meningitis.

III. There are other evidences of disease of the nervous centres.

(1,) There is hemiplegia of the same side simultaneous in onset with the deafness. This should indicate disease in the *opposite temporo-sphenoidal lobe or the strands leading to it.*

(2.) There is deafness mainly or entirely manifested by a failure to understand spoken words (word deafness). This, in a right-handed subject, would indicate *disease of the left superior temporo-sphenoidal convolution.*

(3,) There is hemi-anæsthesia of the opposite side ; this (Gowers) would indicate *disease of the posterior part of the internal capsule.*

(4,) There is cross paralysis; it would indicate *disease in the pons.*

(5,) The nerve deafness has developed in a subject of locomotor ataxia; there is *tabetic degeneration of the auditory nerve or nuclei.*

C. There being diminution of bone conduction with a "negative" Rinné; there is a COMBINATION OF OBSTRUCTIVE AND NERVE DEAFNESS.

(a,) There is no history of discharge:—

I. If there is a history of chronic catarrh of the middle ear of old standing (*vide* page 198), in which the hearing has of late become rapidly very much worse:—

(1,) If the patient hears better with a speaking-trumpet than without it, there is probably *secondary disease of the cochlea.* This would be still more certain if there is loss of hearing for high-pitched sounds, and if a former "paracusis Willisii" has disappeared.

(2,) If the patient hears better without a speaking-trumpet than with it, there is probably *ankylosis of the stapes.*

II. If there is a history of primary nerve deafness, (signs of hereditary syphilis, etc.,) a "negative" result of Rinné's test would indicate a *concomitant or super-added catarrh of the middle ear.*

(b,) If there is a history of former considerable discharge, there is probably *exhausted suppurative disease of the labyrinth, secondary to suppurative inflammation of the middle ear.*

NOTES.—The *degree of diminution of bone conduction* is greater in cases of disease of the labyrinth, or auditory nerve, than of the more central portions of the auditory track.

In cases of *disease of the intra-cranial portion* of the eighth nerve (from meningitis or other causes), Gradenigo has noted a marked increase in the rapidity of fatigue of the auditory nerve.

In *unilateral nerve-deafness* it is common for Rinné's test to give an apparently "negative" result on the affected side, owing to the tuning-fork on the mastoid being heard by the other ear. This is very apt to mislead, but it can usually be checked by Weber's test giving a "negative" result.

THE PATIENT COMPLAINS OF PAIN IN OR NEAR THE EAR.

A. The pain is centred IN THE EAR.

(a,) If there is no defect of hearing, no sign of local inflammation, and the pain is intermittent, the pain is OTALGIA. This may be reflex or local.

(1,) If there is evidence of disease of the teeth, tongue, or throat, the pain is a *reflex otalgia*.

(2,) If all reflex causes can be excluded, it is *neuralgia of the tympanic plexus*, which may, or may not, be part of a neuralgia of more extensive distribution.

(b,) If there is a moderate disturbance of hearing, but this has not come on at the very commencement of the attack of pain, we may assume that the disease is situated not in the tympanum itself, but IN THE EXTERNAL MEATUS.

(1,) If the meatus is uniformly reddened and narrowed, the introduction of the speculum causes a slight pain, and, later, there is a scanty discharge from the middle walls, the case is one of *diffuse external otitis*.

(2.) If there is a round sessile swelling in one or more localised spots on the wall or floor of the meatus, and the introduction of the speculum causes excruciating pain, we may diagnose *acute circumscribed external otitis*, or in other words *furuncle* of the meatus. The pain here is often of a paroxysmal character, and usually reaches its utmost intensity in the earlier hours of the night.

(3.) If on inspection the membrane is seen to be congested, or dull, the features being obscured, and the lining of the meatus comparatively normal with much less defect of hearing than the change in the appearance of the membrane would seem to suggest, there is *acute myringitis*. Inflation causes pain and makes the hearing rather worse.

(c,) If there is from the very commencement of the pain a high degree of deafness the disease may be localised as IN THE TYMPANUM itself.

I. When the constitutional disturbance is slight and pyrexia moderate.

(1.) If gentle inflation gives some relief and improves the hearing to a slight degree, there is *acute catarrh of the middle ear*. On inspection, the membrane may be seen to be congested round the margin and down the line of the manubrium, or it may present a coppery tint and brilliance, or it may be traversed by a horizontal black line showing the height of the collection of fluid inside.

(2,) If the constitutional disturbance is great, the pyrexia considerable, and the symptoms almost suggestive of meningitis, if on inspection there is violent redness of the membrane with bulging, possibly a yellowish tint in the most prominent part, the disease is *acute suppurative inflammation of the middle ear*, and there is later seen a discharge of muco-pus followed generally by relief (*vide* page

206). In *influenzal* and *erysipelatous* cases this relief is not so usual as in others.

B. The PAIN IS SITUATED IN THE MASTOID REGION.

(a,) If there is swelling over the mastoid with redness and tenderness, then :

(1,) If this swelling is quite circumscribed and can be moved about over the surface of the gland, there is *inflammation of the mastoid lymphatic gland.*

(2,) If there is a swelling which shelves very gradually down to the bone, is quite immovable, and later becomes somewhat boggy, we have to deal with *mastoid periostitis.* This is occasionally *primary* but usually *secondary* to disease in the interior of the mastoid, or in the external meatus.

(3,) If there is a dense fluctuating swelling extending upwards and projecting the auricle outwards and downwards from the side of the head, we have to deal with *sub-periosteal mastoid abscess.* On incision this may be found to be entirely localised, or much more often to communicate by means of a fistula with the meatus, the tympanum, mastoid cavities, the lateral sinus, or the posterior or middle cranial fossa.

(4,) If there is—a very rare condition—an obvious swelling of the bone itself as compared with the same region on the opposite side, we have to deal with *cortical mastoiditis,* that is to say, with suppuration in one of the superficial cells of the mastoid process, such as follows influenza and other forms of acute suppuration of the middle ear.

(b,) If there is no marked local swelling, but a deep throbbing, boring pain, disturbance of health, and sometimes symptoms approaching to typhoid, we have probably to deal with internal mastoiditis.

(1,) If this follows an acute suppuration in the middle ear, especially of influenzal origin, there is almost certainly *suppuration in a mastoid cell.*

(2,) If it is a sequel to chronic suppuration, it is almost certainly due to *suppuration in the antrum,* and often associated with the formation of epidermic or cholesteatomous masses in the interior of the temporal bone.

(c,) Intermittent pain in the mastoid region without constitutional or local signs of inflammation, though generally subsequent to old mastoid disease, is *mastoid neuralgia.*

C. The PAIN IS MORE OR LESS GENERALISED over the head, and there are marked febrile or cerebral disturbances.

(a,) These being associated with diseases of an ACUTE form.

(1,) If relief follows evacuation of pus from the tympanum by incision or removal of other obstructions, followed if necessary by washing out of the tympanum through the Eustachian tube (and without this last proceeding the diagnosis of more serious disease should not be made), the disease is retention of pus due to *acute suppuration of the middle ear.*)

(2,) If not thus relieved, disease in the *mastoid* should be looked for (*cortical mastoiditis* in acute suppurative otitis, *antral suppuration* in the chronic form), and should not be excluded from the diagnosis without operative exploration if the symptoms get more severe, or if after forty-eight hours of dry cold applications (Leiter's coil or ice-bag) they do not diminish.

(3,) If exploration of the mastoid does not reveal the presence of suppuration such as would account for the symptoms, and violent general headache, delirium, vomiting, constipation, and, later, retraction of the neck ensue, the disease is *acute meningitis.*

(4,) If there are repeated rigors, well-marked oscillations of the temperature, possibly diarrhœa, and, later, metastatic formations of pus, the disease is *pyæmia.*

(b,) The patient being the subject of CHRONIC suppurative inflammation of the middle ear.

I. The temperature being continuously high :

(1,) If relief follows evacuation of the pus by the methods above-mentioned, there has been simple *retention of pus.*

(2,) In the absence of such relief the *mastoid antrum* should be explored by operation, as a probable seat of suppuration or of the formation of cholesteatoma.

(3,) If there is comparatively localised headache with some degree of tenderness on pressure or percussion, there is probably an *extra-dural abscess*, which can only be ascertained by trephining.

(4.) If the headache is of an acute diffused character, with vomiting and early and continuous delirium, etc., we have to deal with *meningitis.*

II. The temperature showing marked oscillations :

(1,) If there is an initial rigor not necessarily repeated, we must suspect *thrombo-phlebitis of the lateral sinus.* This would be confirmed by the following signs : The presence of a hardness along the line of the internal jugular, distension of the retinal veins, tenderness on pressure behind the mastoid process (Bennett), and, on exposure of the lateral sinus by trephining, evidence of a clot or collection of pus in that vessel. Sometimes pus may be seen on exposure of the mastoid foramen, in the course of exploring operations.

(2,) If the rigors are repeated, and especially if metastatic suppuration takes place, we have to deal with *pyæmia.*

III. If the temperature after an initial rise is normal or subnormal, there is a severe localised headache and considerable mental dulness with constipation, slow pulse and loss of flesh ; there is in all probability an *encephalic abscess.* The *temporo-sphenoidal lobe* should then be explored by trephining and the introduction of a trocar and cannula with or without an aspirator. If no abscess is found, the *cerebellum* should be exposed without further delay, and explored in the same manner, more especially if there was considerable bulging of the dura mater through the trephine hole.

N.B.—For the confirmation of the diagnosis of these formidable sources of pain, the reader is referred to the systematic text books in the study of which the above scheme will be found a useful guide.

It must be remembered that these results of chronic ear-diseases may occur in various combinations with corresponding modification of symptoms, such sequence of events as the following being not unusual :—suppurative inflammation of the middle ear (say from scarlet fever), perforation, extension to the mastoid antrum, epidermisation of the mucous membrane, formation of a cholesteatoma in the antrum, erosion through the posterior wall of that cavity into the sigmoid groove, periphlebitis and thrombosis of the sinus, infection of the thrombus, purulent breaking-down of the clot, dissemination of pathogenic emboli by the veins, metastatic abscesses and death from pyæmia. Again, suppuration in the "attic" frequently leads to erosion of the tegmen tympani, extra-dural abscess, lepto-meningitis, and death.

THERE IS A DISCHARGE FROM THE EAR.

Discharges may be divided into four groups—a purulent, a sticky oozing, a more or less hæmorrhagic, and a sanious.

A. *The discharge is* PURULENT.

(a,) If it is at present, or has previously been copious with considerable deafness from the commencement of the symptoms, we may assume that the discharge is from the MIDDLE EAR, especially if it contains unmistakable mucus, and the presence of a perforation in the membrane is revealed by inspection and auscultation.

I. If then it is of recent occurrence, and has been preceded by acute pain, it is *acute suppurative inflammation of the middle ear.* If the suppuration has come on without being preceded by marked pain, it is probably *tuberculous* in origin, and search should be made for the tubercle bacillus and other signs of that disease.

II. If the discharge is of old standing it is one of the forms of *chronic suppurative inflammation of the middle ear*. We have then to find out the reason of its chronicity, as follows :—

(1,) If antiseptic cleansing has not been practised the chronicity may be due to *simple stagnation* and *saprophytic putrefaction*.

(2,) If antiseptic cleansing has been practised but has failed to effect a cessation of the discharge (and of the fœtor, should such be present), we must look for one or other of the following conditions : —

α. Before or after syringing the ear, if we see a smooth, shiny, translucent body of soft consistency occupying the lumen of the meatus we have to deal with a *polypus*. This probably originates from the interior of the tympanic cavity, and grows through an aperture in the membrane, revealed by auscultation, and it is then a *tympanic polypus*, but if with this appearance there is no perforation sound, and if with the probe (after cocaine) the pedicle can be felt to be rooted from a lesser depth than that of the meatus, it may possibly be an *extra-tympanic polypus*, but the doubt can often only be solved after the excision of the tumour.

β. If before or after syringing there can be seen one or more small bright red sessile growths, sometimes agminated into a raspberry looking mass, and which usually bleed on probing (*vide* also page 209), we have to deal with *granulations*. These may arise directly from the mucous membrane, or the lining wall of the meatus, but they are usually associated with disease of bone, and more especially when after removal they recur with rapidity.

γ. If on inspection the malleus is seen and felt to be bare, eroded and rough either through a perforation of the membrana tensa or of the membrane of Shrapnell or, if there is a persistent perforation in the membrane of Shrapnell behind the processus brevis through which a probe impinges upon rough bone, we have to deal with *caries of the malleus* or *incus*, a condition which is probably more often present than we are able clinically to demonstrate.

δ. If by means of the probe gently passed into the centre of any small or large mass of granulations rough bare bone can be felt, *caries of the temporal bone* may be diagnosed. The favourite spots for this are the postero-superior wall of the meatus, the outer wall of the attic and (beyond reach of the probe) the roof of the tympanum or the antrum, and the posterior wall of this latter cavity. In cases of long standing discharge, especially in syphilitic or tubercular subjects, the possibility of disease of the bone of greater or less extent can hardly be excluded.

ε. If the signs already mentioned (page 204) are present, *disease of the mastoid antrum* may be held responsible for the chronicity, but often

without them if there is a fistula on the posterior wall of the external meatus, marked by the presence of a granulation, or if by means of Siegel's exhausting speculum, after thorough syringing of the ear, pus can be sucked out from the postero-superior portion of the tympanum, *suppuration in the antrum or in the other accessory cavities* may be assumed to be present.

ζ. If after clearing the meatus the use of the syringe brings away a quantity of pieces of white skin-like membrane in an old standing case, there is *cholesteatoma* in the attic or the antrum, or some other accessory cavity. This condition is often suggested by the occasional occurrence of headache when the cholesteatoma becomes swollen under the influence of moisture or microbic inflammation.

η. By appropriate examination *disease of the naso-pharynx* may be detected as affording sufficient explanation of the chronicity of the aural suppuration.

θ. *Constitutional dyscrasia* may explain the chronicity, such as *tubercle*, *syphilis*, *Bright's disease*, *anæmia*, and especially *diabetes mellitus*. If the suppuration was not preceded by pain, further investigation must be made to confirm the probability of a *tuberculous* origin. (If, on testing with the tuning fork, there is found to be considerable diminution of bone conduction (*vide* page 202) it may be assumed that there is *disease of the labyrinth*, associated with *suppurative inflammation of the middle ear* and probably secondary to it.)

(b,) If the purulent discharge is not and has never been copious, and the deafness has followed the other symptoms at an appreciable interval, then we may fairly assume that the disease arises in the EXTERNAL EAR. This is still further confirmed if the bone conduction is not much increased, at the same time not being diminished, and especially if on inspection the membrana tympani, after cleansing, is found to be whole, and there is no perforation sound on inflation.

I. The discharge is RECENT.

(1,) If it has been preceded by moderate continuous pain, and there is general swelling and redness of the meatus, then there is *acute diffuse external otitis*.

(2,) If it has been preceded by acute paroxysmal pain of several days' duration, it is probably a discharge from a furuncle, in other words, *acute circumscribed external otitis*, a diagnosis which would be confirmed by the presence of a localised swelling of dark red colour in one of the walls of the meatus, presenting an aperture at its apex.

(This appearance is sometimes simulated by a bulging confined to the postero-superior wall of the meatus due to the burrowing of pus

from the accessory cells, and which may come on rather acutely in the subject of old standing suppurative inflammation of the middle ear.)

II. If the symptom is of OLD STANDING we have to deal with *simple chronic external otitis.*

(1,) If the meatus is more or less filled with soft white skins, usually emitting an offensive odour, the condition is a *desquamative dermatitis of the meatus* often leading to the formation of so called *external cholesteatoma.*

(2,) If the scaly condition rapidly recurs, microscopical examination should be made, and if it reveals the presence of various forms of aspergillus (a very rare condition in this country) the disease is *parasitic external otitis.*

(Chronic external otitis most frequently occurs as an accompaniment and sequel of chronic suppuration of the middle ear.)

(3,) If there is a pink, shiny growth of soft consistence occupying the meatus, this is a *polypus* which, though most commonly growing from the interior of the tympanum, occasionally arises in the meatus, having its point of attachment on one wall or on the membrana tympani. This is rendered more probable if there is very little discharge, if there is no perforation sound, and if with the probe the pedicle can be traced to a point less than an inch from the orifice.

(4,) If there is a bright red growth of small size or a raspberry looking mass lying in the meatus, the condition is that of *granulations* which may grow from the surface of the membrana tympani *(myringitis granulosa)*, or from the wall of the meatus at the site of a boil *(post-furuncular granulation)*, or of a limited *caries* or *necrosis.* The presence of necrosis may be made out by means of a probe. If pressure on the sequestrum causes pain it is probably a *separated sequestrum.* A granulation on the posterior wall often indicates a *fistula* between the meatus and the mastoid.

B. The discharge is a slight STICKY OOZING.

(1,) This is preceded or accompanied by itching ; it may be put down as *eczema of the external meatus*, and evidence of a gouty diathesis, or of seborrhœa of the scalp, should be sought for as amongst the most important causes.

(2,) If the discharge is fœtid, and the meatus is surrounded by dull, semi-opalescent granular elevations, these are probably *condylomata* of the meatus. They are often very characteristic in appearance, but further evidence of secondary syphilis must be obtained.

C. The discharge is more or less HÆMORRHAGIC.

(1,) There are merely slight streaks in the otherwise purulent discharge ; the bleeding arises in all probability from a *vascular granu-*

lation, or more rarely an *irritated angioma*. These appearances may be readily confirmed by inspection.

(2,) There is a considerable quantity of pure blood in the later stages of suppurative or carious disease of the middle ear; this is probably due to *erosion of blood vessels*.

(3,) An oozing of blood into the meatus without any of the above signs is a very exceptional occurrence, either as *vicarious menstruation* or neurotic *stigma in hysteria*.

D. The discharge is SANIOUS.

A SANIOUS offensive discharge with fungating granulations, infiltration of the meatal wall, involvement of nerves (acute radiating neuralgia), and implication of the neighbouring glands, is characteristic of *malignant disease of the external meatus or middle ear*. Microscopical examination of removed fragments should confirm a diagnosis of cancerous or sarcomatous growth, which is generally not very difficult as long as the surgeon's mind is open to the possibility of its occurrence. It is often simulated by caries or necrosis of the temporal bone in its latter stages. *Sarcoma* may occur with some of the clinical features of an aural polypus, and *epithelioma* at its earliest stage may be hardly distinguishable in appearance from a simple warty growth.

THE PATIENT COMPLAINS OF NOISES IN THE HEAD.

The different forms of tinnitus aurium, or noises in the head, were fully described in the "Medical Annual" for last year. The chief question for diagnosis is whether or not the noise is caused by disease of the ear, and this depends practically upon whether there is or is not, associated disturbance of the function of hearing.

A. There is a DEFECT OF HEARING.

(a,) The noise is SIMPLE (not elaborated); there is tinnitus due to diseases of the organ of hearing, for the diagnosis of which *vide* pages 196 to 202.

I. The noise is pulsating.

(1,) It can be checked by compression of the carotid artery in the neck; it is due to *arterial congestion of the middle or external ear*.

(2,) It can be checked by compression of the vertebral arteries in the sub-occipital triangle; it is due to *arterial congestion of the internal ear*.

(3,) If the pulsating murmur is readily heard on auscultation of the cranium, or ear, it is suggestive of the presence of *intra-cranial aneurism*, the other signs of which should be sought.

II. The noise is not pulsating.

(1,) It is a high-pitched hissing or singing; it is probably due to *increased tension of the tympanic structures.*

(2,) It is a dull low-pitched rumbling, buzzing, or rushing; it is probably due to *venous congestion*, when it is made worse by lying down, ingestion of food or stimulants, and by constipation. On the other hand a humming noise relieved by lying down, by taking food or stimulants, and accompanied by pallor, is caused by *anæmia.*

(The diagnosis is much more dependent upon the investigation of the function of hearing than upon the nature of the noise itself.)

(3.) It is similar to the resonance of a "sea-shell"; this is usually attributed to the *contraction of the tensor tympani.* It is common in all chronic catarrhs of the middle ear, but is of little diagnostic importance.

(b,) The noise is of an ELABORATED character, (voices, music, etc.); there is an *auditory illusion*, that is to say, the simple sound resulting from the irritation of the auditory nerve is misinterpreted by a disturbed mental organ. This generally results from mental disturbance, either engrafted on, or caused by chronic disease of the organs of hearing.

B. The HEARING IS ABNORMALLY ACUTE OR PAINFUL.

(a,) The hearing is abnormally acute, the patient being the subject of exaggerated nervous excitability; the condition is that of *hyperacusis* (oxyakoia) a rare condition very readily over-looked.

(b,) The hearing is painful. This condition is *hyperæsthesia acoustica* (odynacusis, D.G.), is usually only for certain sounds, the patient being often comparatively insensible to others. It is, however, more often a late symptom in chronic catarrh of the middle ear.

C. HEARING IS NORMAL under all tests.

(a,) The tinnitus being of a simple (non-elaborated) form, the cause is some functional or organic disturbance in the central percipient organs.

(b,) The noise is of an elaborated character (music or voices); there is *auditory hallucination*, due to present or threatening mental disease.

THE PATIENT COMPLAINS OF VERTIGO.

This may be either objective (objects appearing to rotate round the patient), or subjective (the patient feeling himself rotate), and may lead to actual falling down. In cases of vertigo from diseased

ear, the writer has usually elicited that the patient felt himself turning away from the affected side.

A. There is CONCOMITANT DEFECT OF HEARING which may immediately precede, accompany, or immediately follow a given attack of vertigo.

(a,) The defect of hearing is of the character of NERVE DEAFNESS (*vide page* 199).

I. If it has been sudden in onset it may be idiopathic or traumatic.

(1,) If idiopathic, and it takes the form of intense giddiness, usually causing the patient to fall, accompanied by considerable loss of hearing, by tinnitus, nausea, frequent vomiting, coldness and partial collapse, the feeling of rotation continuing to some degree in the recumbent posture, and the loss of hearing being persistent, there is *effusion into the labyrinth*, so-called "*Menière's disease.*" (A slighter degree of vertigo with a transient defect of hearing, worse on lying down, may be ascribed to *congestion of the labyrinth.* A similar condition, but with disappearance of vertigo on lying down, may be attributed to *anæmia of the labyrinth.*)

(2,) If traumatic, such symptoms after an injury to the head may arise from *concussion of the labyrinth* or *hæmorrhage into it from fracture* of the base of the skull.

II. If acute in onset, it may be attributed to *acute anæmia*, *congestion or inflammation of the labyrinth*, as described on page 200, being least marked in the syphilitic form.

III. Chronic vertigo (habitual attacks). For the diagnosis of this, see the description of chronic anæmia, or congestion of the labyrinth, hæmorrhage, or inflammation, traumatic, infectious or simple (*vide page* 200). It may originate in a distinct attack of effusion into the labyrinth.

(b,) The defect of hearing is of the character of OBSTRUCTIVE DEAFNESS. This form of aural vertigo is often taken for Menière's disease, and may perhaps advisedly be called *pseudo-Menière's disease.* It is usually due to abnormal increase of pressure on the labyrinth, from causes to be distinguished as follows :—

I. If there is a discharge from the ear, either acute, or occurring as an acute exacerbation of a chronic *suppurative otitis*, it may be attributed to the local circulatory disturbance occurring in that disease. At other times there may be a vascular granulation pressing upon the stapes, or there may be abnormal in-pushing of that ossicle from contraction of the tensor tympani, as in cases of large perforation, the muscle not being opposed by the fibres of the membrane.

II. If there is no discharge, the symptoms of the forms of deafness described on page 198 must be sought for. It will be generally attributable to labyrinthine pressure due to indrawing of the membrane from non-ventilation of the tympanum in Eustachian catarrh, or to over-action of the tensor tympani, especially in extreme relaxation of the membrane, or the loss of large portions of it from old suppurative inflammation, or rarely from inaction of the stapedius.

B. If there is NO DEFECT OF HEARING the vertigo cannot be attributed to disease of the ear. The case may be simplified by attention to the following frequent causes of vertigo.

(a,) If the attack is marked by a more or less protracted period of unconsciousness preceded by an aura, followed by drowsiness, the probability of its being due to *epilepsy* must be kept in mind.

(b,) If there is only a momentary unconsciousness, which is at once recovered from as the patient falls down, and this has been excited by an attempt to cough, such symptoms arise from *laryngeal vertigo or syncope.*

(c,) If there is no unconsciousness during the attack ;

I. If it is affected by closing the eyes :—

(1,) If closing the eyes in a case of definite vertigo affords complete relief there is *ocular vertigo*, and the case should be submitted to ophthalmic examination. In the indefinite dizziness experienced by some when on a height, or in a vast space, or after rotatory movements, relief may follow closure of the eyes apart from ocular disease.

(2,) If it is made worse by closing the eyes, then a loss of knee-jerk, etc., would suggest a search for the other signs of *locomotor ataxia* or *cerebellar disease*, the latter sometimes producing attacks of vertigo resembling those of labyrinthine origin, but except in the very rarest instances without impairment of hearing.

II. If it is not affected by closing the eyes, then :—

(1,) If the attack is preceded by well marked symptoms of dyspepia, and is relieved by vomiting, it is *gastric vertigo.* Many of the cases attributed to this are really labyrinthine vertigo with accentuation of the vomiting.

(2,) If there is tension and possibly slowness of the pulse, the other signs of arterial capillary fibrosis should be sought for as a cause of so-called *renal vertigo*, or the *vertigo of arterio-capillary fibrosis.* It is of the less definite form, and frequently recurs.

(3,) If there is congestion of the face, sleeplessness, and increase

of the discomfort on lying down, vertigo of indefinite type is probably due to *cerebral congestion.*

(4,) A dizziness accompanied by pallor, faintness, and nausea, and relieved by lying down is probably due to *cerebral anæmia.*

The most definite forms of vertigo arise from labyrinthine disease, and disease of the cerebellum.

THERE IS SOME VISIBLE ABNORMALITY.

We refer here to those cases to which attention is not drawn so much by disturbances of function or sensation as by the alterations in appearance, and which have consequently not been dealt with in previous sections.

A. The AURICLE is abnormal in appearance.

(a,) The abnormality is CONGENITAL; there may be :

I. Abnormalities in size (*microtia* and *macrotia*).

II. In number, *polyotia.* There may be small nodules of cartilage covered with skin with or without an associated fistula (*supernumerary auricles*).

III. In shape. The auricle may be like a twisted up roll of skin, or it may fold over the meatus. There may also be abnormal development of the apex of the ear. The satyr ear (the upper anti-helix limb extending up into this projection), or the Darwinian tubercle on the edge of the helix may be especially prominent.

IV. In position.

(1,) It may be developed lower down than is natural, and quite away from the site of the meatus.

(2,) The auricle may project.

(b,) The abnormality is ACQUIRED.

I. Changes on the surface.

(1,) Alterations in colour may be due to the various forms of *skin disease* which we shall not here specialize. Changes in the continuity, the result of ulcers of various forms, including particularly *lupus* and *epithelioma.*

II. Changes in shape.

(1,) Swelling.

α. Without loss of the outlines of the different parts of the auricle may be due either to *eczema* or to *erysipelatous inflammation*, the former being a more chronic condition, and accompanied by less constitutional disturbance ; the latter acute with considerable constitutional disturbance.

β. With loss of some of the outlines, it may occur as the result of

hæmatoma. In this case there is an extravasation of blood into the cartilage and perichondrial space; the auricle in almost its entire extent, swells up with considerable suddenness into a rounded tense fluctuating tumour. This may be *idiopathic*, and then occurs chiefly in the insane, or it may be *traumatic* from a blow on the ear. There is no notable degree of inflammatory disturbance, and in this it differs from a *perichondritis*, which presents somewhat similar features, but is accompanied by considerable pain, is of a brighter red colour, and is usually preceded by furuncle or other inflammation in the external meatus. Limited swellings may occur owing to the presence of *new growths* of which the most common are sebaceous tumours. Tumours further occur round the site of the piercing of the lobule. They are extremely rare in this country. They are generally fibromata, or fibro-sarcomata.

(2,) Shrivelling of the auricle usually occurs as the result of hæmatoma.

(3,) Loss of tissue may occur from ulceration, this being a favourite seat of *gangrene from exposure to cold;* occasionally also of gangrene occurring at the same time in the tips of the fingers or toes. (True or spurious *Raynaud's disease.*)

B. There are abnormalities in the appearance of the MEATUS which may be visible with or without the use of the speculum.

(a,) If they are CONGENITAL they are due to *malformations from defective development.*

(1,) The passage may be completely absent, or it may be represented by a mere dimple, *congenital atresia.* To the probe there is often a feeling as if there was simply a diaphragm of skin with a normal meatus beyond it. As a rule this is absolutely deceptive, and shows a congenital absence of meatus indicating an incomplete development of the structures beyond. This is often accompanied by defective development of the auricle and also by incomplete growth of the corresponding half of the inferior maxilla.

(2,) There is apparently a *double meatus* which may lead into the mastoid process. This is an arrest in the closure of the first branchial cleft.

(b,) ACQUIRED.

I. The meatus is occluded either at its orifice or at a varying depth.

(1,) By means of skin or cicatrix, there being a history of previous inflammation and discharge of either idiopathic or traumatic (*i.e.*, burns, scalds, or corrosive liquids) origin. In the traumatic cases

especially, there may be a comparatively complete meatus and normal tympanum beyond the obstruction. This is *inflammatory adhesive atresia.*

(2,) By means of one or more hard skin covered bodies of a rounded shape growing from the meatal wall. This is *exostosis*, either single or multiple. When these are multiple and the growths enlarged so as to completely occlude the meatus, the stellate or leech-bite form of depression between them is very characteristic.

(3,) A *foreign body* if not of a kind to be acted on by moisture may rest quietly in the meatus for very long periods without causing any symptoms and may be discovered by accidental inspection, or when accumulation of wax takes place to a sufficient extent to block up the little remaining passage.

(4,) There is a dark-brown mass. This is probably a collection of *cerumen* which may not interfere with hearing owing to its not totally filling the meatus though apparently doing so, and leaving just sufficient space for the entrance of sound waves. The floor of the meatus is sometimes extremely convex, and when plastered over with a layer of cerumen may simulate a formed plug of that material.

II. The meatus is narrowed.

(1,) Concentrically as a whole.

α. It is reduced to a slit without any evidence of inflammatory change. This occurs in old people who have lost their back teeth, and is due to increased forcing up of the condyle of the lower jaw, and a somewhat similar condition occurs in connection with excessive development of fat—*senile stenosis.*

β. The walls of the meatus may be thickened and somewhat redder in colour than normal. This is *inflammatory stenosis* from old external otitis.

γ. The thickening of the walls may be so dense as to be obviously due to *periostitic inflammation or hyperostosis.*

(2,) The passage is eccentrically or irregularly narrowed.

α. There are one or more hard skin covered growths projecting from the walls. On examination with the probe they are found to be of the hardness of bone, or even of ivory. These are *exostoses.*

β. A general slight bony narrowing, with more projecting parts at different portions of its circumference is a common form of *hyperostosis.*

NOTE.—The density of these bony formations varies considerably, some being so hard as to deserve the name of *ivory exostoses*, and these are generally broad based or sessile, others are usually pedunculated or so soft as to suggest that they are *calcified or ossified granulations.*

Diseases of Ear (Recent Contributions).

J. Dundas Grant, M.D., F.R.C.S.

The relations of the bony casing of the facial nerve are very fully described by Professor Gellé.[1] He points out that the nerve lies buried not very deeply in the innermost 4 millimètres of the posterior wall of the external osseous meatus, as well as in the partition which separates the cavity of the tympanum from that of the antrum. It may therefore be paralysed by the effects of disease in the portion of the meatus mentioned, as well as by disease in the tympanum itself. It is of the utmost importance to recollect this relation in performing any extensive operations for caries of the temporal bone, and in a lesser degree also, when curetting or removing polypi, enlarging fistulæ, or even probing the innermost part of the external meatus. He illustrates this by the description of a case in which facial paralysis immediately resulted from what was apparently the simple operation of removing a small polypus from the meatus.

A better appreciation of Rinné's Test. The "aëro-osseal difference." —In a paper on this subject read before the Otological section of the British Medical Association, at Bristol, Dr. Dundas Grant,[2] drew attention to what he called the "normal aëro-osseal difference," that is to say, the length of time that normally the tuning fork in use is heard opposite the meatus after it has caused to be heard on the mastoid. In cases of considerable degrees of obstructive deafness this normal aëro-osseal difference is absent, and Rinné's test is then "negative," while in the slighter affections it may be simply diminished, and Rinné's test is positive, but shortened. Thus a positive result with Rinné's test does not exclude a slight degree of middle ear disease. A negative result of Rinné's test would indicate undoubted obstructive deafness, whether or not there was nerve deafness in addition. A frequent source of fallacy existed in cases of marked unilateral nerve deafness, because a vibrating tuning-fork placed upon the mastoid until no longer heard, and then transferred to the meatus was likewise no longer heard. This "negative" result of Rinné's test was illusory, the tuning fork on the mastoid having in reality been heard by the nervous apparatus of the opposite ear. This result has therefore to be checked by Weber's, and other tests, which can be easily done if the possibility of its occurrence is kept in mind.

Abscesses in the external meatus are treated by Courtade[3] by means of intubation, namely, the introduction into the external meatus of an india-rubber tube. He has found speedy relief follow this method of treatment in cases of follicular abscesses, or furuncle of the meatus.

After some days of intubation, the tube is removed and a plug of iodoform gauze is put in its place to keep up the dilatation and to insure antisepsis. He considers it useless when an abscess of considerable size is visible from the exterior, and is then more suitable for treatment by incision. It is indicated whenever the auditory meatus is swollen from otitis externa, and after the operation of separation of the auricle which is now performed for so many purposes. Our readers will remember that the treatment of external otitis by means of plugs of cotton wool dipped in warmed Goulard's solution has long been recommended and used with excellent results, answering very much the same purpose so far as the dilatation was concerned. The use of the drainage tube is however a valuable addition to our means of treating these affections.

Sclerosis of the middle ear has been treated by several authors by means of injections of **Liquid Vaseline** or **Parolein**. Delstanche, of Brussels, was the first to draw our attention forcibly to the value of this method of treatment. It has been carried out by, among others, Dr. Adolph Bronner,[4] Dr. Broeckaert,[5] Dr. Seiss,[6] and Dr. Dundas Grant.[7] In a fair proportion of cases, very distinct amelioration has been recorded. The proceeding is carried out by the introduction of the Eustachian catheter in the ordinary way, the fact of its being *in situ* being confirmed by auscultation. About 20 minims or ½ a drachm of liquid vaseline or parolein is introduced into the catheter by means of a small syringe. The air bag is then applied and the liquid is driven up the Eustachian tubes, a small quantity of it probably entering the tympanum. In some cases, it is advisable to pass through the Eustachian catheter a Weber-Liel's gum-elastic intra-tympanic tube, which may be passed for nearly an inch beyond the tip of the Eustachian catheter. Through it a few drops of the solution may be introduced into the tympanum, considerable pressure with the air balloon being necessary on account of the narrowness of the calibre of the tube. To each ounce of the liquid may advantageously be added a grain of menthol and a grain of camphor. Seiss,[8] recommends this treatment very strongly in cases of tinnitus due to aural sclerosis, as also the employment of freezing by means of ethyl chloride over the branches of the post-auricular and stylo-mastoid arteries. Dr. Knapp[9] has seen benefit follow the use of Lucae's spring pressure probe, especially in its recently improved form. The instrument is more elastic than formerly, and its end is dipped in a freezing solution for a short time before use. In view of the excellent results sometimes derived from **Massage** and **Passive Movement** of the membrane and ossicles by means of Delstanche's rarefacteur, and by Siegel's

pneumatic speculum, Kirchner devised a simple instrument for the use in particular of the poorer class of patients, *an apparatus for gymnastics of drum and ossicles* which he exhibited before the Roman Congress.[10] It consists of an india-rubber tube fitting tightly into the auditory meatus, and a mouthpiece at the other end by means of which the patient could alternately blow and suck so as to move the structures mentioned in and out, the amount of force used being regulated by the patient's own sensations. To prevent the insuction of objectionable matters into the mouth, a glass bulb containing a little wool is introduced into the course of the india-rubber tube.

The Curette and the Bur in Mastoid Operations.—Dr. Clarence Blake,[11] in a paper read before the Roman Congress, advocated greater dependence upon the use of the curette in mastoid operations. The instruments recommended should have rather a longer lip than the sharp spoons with which we are generally provided. It is obvious that by working from within outwards greater safety is ensured, and much may be accomplished which would otherwise have to be done by means of the more dangerous gouge and mallet. Macewen[12] is, on the other hand, in favour of the use of a bur, worked by means of a dental engine, and in his hands it seems to have given extremely good results. The instrument has to be held like a pen, and applied very lightly to the bone. When an aperture has been made, it can readily be enlarged by the application of the bur to its margins, but the progress should be constantly tested by means of a searcher. In practised hands, this instrument is no doubt very valuable, and its use in preference to the gouge and mallet may spare the necessity for a considerable amount of concussion, which might lead to the rupture of an abscess, or to the fracture of the roof of the middle ear. Dr. Macewen's recommendation ought certainly to receive very considerable attention.

Operative removal of Cholesteatoma.—Dr. Reinhardt,[13] of Duisburg, advises the retention of a persistent opening in the mastoid after the removal of cholesteatoma by operation in that region. To facilitate this, a flap of skin should be inverted into the cavity, as has already been recommended by other writers. He advises, however, that the flap should be taken from the posterior surface of the auricle, as it is not likely to give trouble through the growth of hair. At the Roman Congress he gave his experience of a considerable number of cases. The flap of skin must be marked out and dissected up in the course of the usual incision. The Editor has found it comparatively easy in this way to make a small tongue-shaped flap, the edges

of the incision by which it is removed from the back of the auricle being brought together by means of stitches, and healing very readily.

Macewen's Treatment of Phlebitis of the Lateral Sinus.—After having in all cases previously opened the antrum and tympanum, Dr. Macewen[14] exposes the sigmoid sinus by the application of a rotatory bur behind the posterior wall of the antrum. He continues the opening for half an inch horizontally backwards, and then enlarges it upwards and downwards according to the requirements of the case. If there is thrombosis it is laid bare to the extent of an inch vertically. Should the wall of the sinus be perforated by ulceration the purulent contents are scooped out through the existing opening, otherwise this is done through an artificial slit made for the purpose. The sinus is next obliterated by induplication of the walls. Powdered **Boracic Acid** (4 parts) with **Iodoform** (1 part) is then packed in up to the level of the bone and the wound stuffed with iodoform gauze. He considers this treatment sufficient in most cases without ligation of the internal jugular. This latter operation he considers to be often difficult owing to the matting of surrounding tissues and enlargement of glands, apt to defy asepsis, and always leading to a reversal of the current in intracranial sinuses which may lead to the diffusion of septic material in the cranial contents. He holds, furthermore, that it does not shut off all the venous routes by which septic embolism may invade the vital organs, such as the condylar veins. Of course when the ligation of the vein is determined on, this must be done before the sinus is obliterated. "When," he says, "the infective thrombus in the sigmoid sinus has undergone such extensive disintegration as is unlikely to be reached by obliteration of the upper two-thirds of the sigmoid sinus, the ligature of the internal jugular is indicated. When in a thrombosed internal jugular, giving the sensation of a hard cord-like structure, its upper part becomes soft from disintegration of the thrombus, and when this is followed by descending disintegration, ligation of the vessel below this point is in most cases necessary." Surgeons will not readily abandon on theoretical grounds an operation from which such excellent results have so frequently accrued, but they cannot but be impressed with the results obtained by Prof. Macewen from the simple obliteration of a portion of the sigmoid sinus.

New Aural Specula.—Mr. Richard Lake[15] has had a speculum made of silvered glass and covered with gum like a Ferguson's vaginal instrument. It is claimed for it that it reflects light better than those in use, and that it is not injured by acids. Dr. McNaughton Jones[16]

has devised one with a hinged clip for the reception of magnifying lenses of various strength. Dr. Dundas Grant's[17] magnifying operating speculum (*Fig.* 1) has also a hinged clip with a lens fixed in it, but the lower part of the lens and of a considerable portion of the speculum is cut away so as to allow ample room for the introduction of probes and operating instruments, without interfering with the use of the speculum in the usual way.

Dr. Wodon[18] has modified the ordinary speculum by making oval openings in the side of the tube, so as to expose a limited portion of the meatal wall.

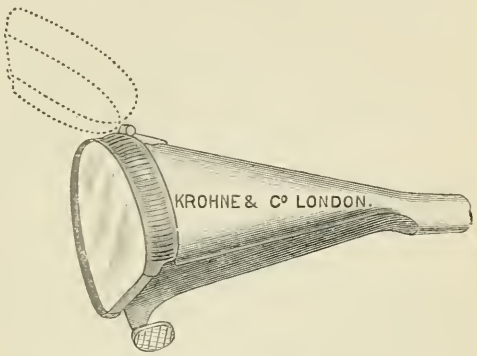

Fig. 1.—Dr. Dundas Grant's Speculum.

REFERENCES.—[1] "Ann. de. Mal. de. l'Oreille," January, 1894; [2] "Journ. of Laryngol.," Oct. 1894; [3] "Ibid., June, 1894; [4] "Brit. Med. Journ.," 1894, vol. ii., p. 805; [5] "Journ. of Laryngol.," p. 822, 1894; [6] "Ann. of Oph. and Otol."; [7] "Journ. of Laryngol.," p. 573, 1894; [8] "Ann. of Otol.," Jan. 1894; [9] "Brit. Med. Journ."; [10] "Journ. of Laryngol.," p. 281, 1894; [11] "Journ. of Laryngol.," p. 325, June, 1894; [12] "Pyogenic Diseases of the Brain and Spinal Cord," p. 299, Glasgow, 1893; [13] "Journ. of Laryngol.," p. 273, May, 1894; [14] "Pyogenic Diseases of the Brain and Spinal Cord," p. 311, Glasgow, 1893; [15] "Brit. Med. Journ.," Feb. 3, 1894; [16] "Lancet," Nov. 18, 1893; [17] "Journ. of Laryngol," p. 404, July, 1894; [18] Ibid., p. 838, Dec. 1894.

Aural Vertigo. [*Editorial.*

MacKenzie[1] after a discussion of the lesions, the diagnosis, and the causes of aural vertigo, holds that the prognosis is unfavourable so far as recurrences are concerned, unless the condition is due to a foreign body.

The treatment of an acute attack requires that the patient should be put in a recumbent position so long as the vertigo is increased by standing up. The excitability of the nervous centres is subdued by **Bromide of Potassium** given in moderate doses. In gouty cases, **Bromide of Lithium**, also the **Salts of Potassium, Colchicum**, and **Salicylate of Sodium,** are often of service, especially when preceded by a mercurial purge. Counter-irritation, in the form of a small blister be-

hind the ear, is sometimes of benefit. Any local disorders of the middle or external ear should receive attention. During the intervals between paroxysms, **Quinine**, 3 or 4 grains three times a day, and in some cases double this dose, is of service. **Salicylate of Sodium** appears to do good; **Pilocarpine** is recommended given hypodermically, beginning with 3 m doses of 4 per cent. solution every day, and increasing the dose to $\frac{1}{10}$, $\frac{1}{4}$, or even $\frac{1}{3}$ if the drug is well borne. The arterial tension should be well observed. For the purpose of keeping this down, **Mercury** is particularly serviceable, an occasional blue pill being given once or twice a week, or, in place of this, **Calomel** may be used, 3 to 5 grains, to be taken whenever there are premonitory symptoms, such as increased tinnitus, fulness in the head, or headache.

REFERENCE.—[1] "Therap. Gaz.," Aug. 15, 1894.

Synopsis.—(Vol. 1894, p. 231.) Unrefined Honey with Rye-meal as topical dressing for par-auricular abscess. Iodol for moist eczema, preceded by washing with lotion of Van Swieten's Liquor with 3 or 4 times its bulk of warm water. For dry eczema Iodol, 1 part; Lanoline, 30 parts; when affecting meatus syringe out with the above lotion, dry and fill with iodol 1 part, paraffin oil 30 parts; or apply concentrated Nitrate of Silver Solution in a tampon after warm syringing. For pityriasis, remove hairs, cleanse with Boric Acid Solution and apply Silver Nitrate Solution, 1 to 20, on cotton wool. When scales are removed apply solution of Salicylic Acid, Canada Balsam and Collodion on wool. For otalgia, Massage by elastic probe, also: ℞ Camphorated Chloral, 5 parts; Glycerin, 30 parts; Sweet Almond Oil, 10 parts; apply on cotton wool. Butyl-chloral-hydrate, 5 gr. pill until 30 gr. are taken, in neuralgia due to middle ear disease. For otitis, Cocaine Hydrochlor., 5% solution, or Liquid Vaseline Injections. Chronic cases of otorrhœa sometimes cured by copious warm syringing with 1 to 8000 Bichloride Solution; also washing with 3% Boracic Acid Solution, drying and introducing Dermatol. For labyrinthitis due to syphilis, Pot. Iodide and McDade's Mixture, together with Pilocarpin Nitrate hypodermically, gr. $\frac{1}{10}$ up to $\frac{1}{5}$ and even $\frac{1}{3}$. In Menière's disease Quinine may be combined with 0·6 or 1 gramme of Ergotine daily; Iodide of Potassium in apoplectiform cases, also Pilocarpin and Antipyrin, also Pot. Bromide in large doses—45-grs. t. d.; Valerianate of Iron with Opium and Cascara Sagrada.

ECZEMA.

T. Colcott Fox, M.B.

Veiel[1] holds there is no specific for eczema, and internal treatment is only indicated where complications such as scrofulosis, anæmia, gout, glycosuria, or albuminuria exist. The action even of arsenic in old infiltrated eczemas is problematical. **Tar** and its derivatives and **Mercurials**, which penetrate and traverse the intact skin, are the most active remedies because they are parasiticides, whilst **Lead, Bismuth, Zinc** and other non-volatile metallic substances will heal, but do not bring about a durable cure. In intertriginous eczemas of obese per-

sons and in eczema associated with piles, Veiel has never seen a cure brought about by dieting alone, though the latter may assist.

In acute but dry eczema dry cold applications do best, as sachets of starch powder, a bladder of ice enveloped in linen, gelatines. The latter often cuts short an attack. If the inflammation goes on to exudation, or if very widespread, powders must be used till a remission occurs. Any patches remaining weeping cure very rapidly with **Unna's Plaster of Oxide of Zinc** and **Benzoic Acid, Lassar's Paste,** and especially **Pick's Plaster of Salicylic Soap.** In the scaly period he prefers a 5 per cent. **Tannin Ointment** or **Wilson's Salve.**

In chronic eczema. Pick's sublimate gelatine or his plaster above mentioned or Lassar's paste, do well. In callous eczemas of the palms and soles he uses Unna's salicylic plaster, taking great care to remove it if it excites inflammation. Moist eczemas of hairy regions are dried up as a rule by a 10 per cent. salicylic ointment, but sometimes tar is necessary. Nothing as yet has completely replaced tar, and the tar soap is the best. Its lather applied twice daily with a brush is often efficacious, and especially in the generalized scaly eczemas of old people, and when coated over with zinc glyco-gelatine. At the beginning he often applies 1 per cent. of tar in cold cream with 5 per cent. of tannin, or in Kaposi's diachylon ointment. Where pure tar is indicated oil of cade is best. Alcoholic solutions of tar are more energetic and rapid, but require watching. Caoutchouc dressings increase the action of tar. Where much infiltration exists he employs chrysarobin and pyrogallol, while protecting the periphery with zinc glyco-gelatine. Resorcin, creolin, and ichthyol have a less sure action. He rarely uses sulphur except in seborrhœic eczema.

An interesting discussion on the *nature of eczema* took place in the Section of Dermatology and Syphiligraphy of the International Medical Congress at Rome. The *rôle* of micro-organisms in the etiology was the chief point of debate.

At the Bristol meeting of the British Medical Associaton Malcolm Morris introduced a discussion on the *Management of Eczema* with an admirable paper, which will repay study. After some preliminary remarks, he expressed his opinion that the constitutional element is in most cases altogether secondary, exciting only a modifying influence on the local process. The causa causans he believed in the majority of cases to be micro-organisms.

A constitutional dyscrasia, a disordered innervation, debility and exhaustion from want of sleep and suffering, or disorder of the digestive apparatus, should be remedied by appropriate measures. In the absence of such underlying and modifying influences he trusts to local

treatment. When the lesions are acutely inflamed, and there is arterial tension Morris recommends **Vinum Antimoniale,** beginning with a dose of ℿx-xiij, repeating it in an hour and perhaps two hours later again. and gradually widening the intervals whilst reducing the dose till it reaches ℿvj. The latter dose should be continued thrice daily till the inflammation distinctly subsides. Depression is a positive contra-indication for the employment of this drug. Sedatives are indicated where there is great nervous excitement and sleeplessness. **Opium** is here the sheet anchor, preceded by a full dose of calomel, and the action of the opium afterwards regulated by saline aperients. **Sulphonal** may be given where opium disagrees. With nervous depression nerve tonics are called for, of which **Quinine** is the best. It may be combined with opium, as in cases with much discharge **Belladonna** may be with quinine. **Phosphorus, Strychnine, Arsenic,** carefully exhibited in the absence of acute inflammation, and **Ergotin** where there are frequent exacerbations may also be useful. Malnutrition, weakness, and anæmia, are indications for **Cod-liver Oil** and general tonic treatment, but iron is harmful in the presence of acute inflammation. Any definite source of peripheral irritation should be removed, menstrual derangement or uterine disease remedied, and the nervous disturbances incidental to the climacteric period combated by such drugs as **Musk, Valerian**, etc.

Diet has no influence at all in Morris's opinion, except indirectly. The patient should take such food as he finds most suitable to his digestive powers, and avoid a "lowering" regimen. Otherwise the only indications for special dieting are in the presence of such conditions as gout or diabetes, and the advisability of a limited, bland, non-stimulating diet in acute inflammation. Strict moderation in the quantity of drink is advisable, and in acute eczema all beverages causing flushing are inadmissible, otherwise beer, tea and coffee are usually allowable.

In the local treatment the following aims are to be kept in view, viz., to destroy micro-organisms, to protect the inflamed surface from the air, and from further microbic invasion, and to sooth irritation; and further in the application of remedies, to temper the strength of the remedy to the tolerance of the patient's skin, and to keep the remedy continously in contact with the affected parts. Sooth when the inflammatory process is acute; stimulate when it is chronic; and in either case keep the parts under the continuous influence of antiseptics and parasiticides, of a strength carefully regulated in accordance with the intensity of the disease, and the sensitiveness of the skin. In acute eczema **Ichthyol** is particularly useful as a vas-

cular sedative and parasiticide. When the discharge is profuse wash the part with a weak solution of boric acid, and then dry with muslin bags containing starch or flour with boric acid. In dry chronic eczema begin with precipitated sulphur or resorcin, grains x of either to zinc ointment or other soothing base ℥j, and gradually increase the strength with watchful care not to cause irritation. Salicylic acid, white precipitate, boric and carbolic acids, are also useful with cooling creams as vehicles.

For the continuous application of local remedies in limited areas of a chronic character, Unna's plaster mulls, such as carbolic acid and mercury, and oxide of zinc, are most serviceable. **Chrysarobin** gives good results in persistent chronic eczemas of the flexures.

In preventing relapses, *change of climate*, with complete rest of mind and body, is productive of good, and various "waters" are serviceable chiefly in obstinate chronic cases.

At the same meeting Unna demonstrated the "moro-coccus," which he believes to be the characteristic microbe of eczema. It chiefly grows in moist crusts, and not in the blood; it must have oxygen.

Klotz,[2] writes on the principle of antisepsis in the treatment of eczema. In *aggravated* cases he: (*a*,) Removes all crusts and encumbrances with castile soap and water, and afterwards cleanses the surface with an aqueous solution of corrosive sublimate (1 in 3000 or 5000), or in milder cases or in children with a 2 to 3 per cent. solution of boric acid; (*b*,) He washes the diseased areas with a similar solution night and morning by means of a pad of absorbent cotton, a piece of lint, or a clean cloth (not sponge); (*c*,) At night, and, if possible, in the morning, he applies for half an hour or an hour lint or cotton soaked and kept moist in a similar solution; (*d*,) After this the parts are carefully dried, and a 10 per cent. boric acid vaseline is rubbed in and covered with lint or cotton and bandaged; (*e*,) This course of treatment is continued until a clean surface is presented and suppuration has ceased.

In cases of very acute inflammation, or in eczema of the lips, with or without ulcers, he applies compresses soaked in boric acid solution to which 2 to 4 parts of acetate of lead per 1000 are added. A little glycerine and alcohol may be added, and a third or a quarter of the water replaced by lime-water.

Other antiseptics of great value are ichthyol (1 to 2 in 1000), salicylic acid, resorcin, thymol, permanganate of potassium, tannin, acetate of alumina, and carbolic acid. In dusting powders the tendency is, Klotz says, to eliminate all vegetable powders like starch, and use minerals, not liable to decomposition, like talcum, kaolin, carbonate of

magnesia, etc. The addition of 5 to 15 per cent. of boric acid is very useful.

In the discussion arising on this paper, Fox insisted on the necessity for internal treatment, and on the value of the impermeable dressing of **Vulcanized India-rubber,** which is not an antiseptic method. Jackson and Elliot disagreed with the author as to the harmlessness of water in many cases.

In *chronic eczema of the palms and soles* Wickham[3] softens the epidermis by poulticing, then applies a thick layer of soft potash soap for twenty-four hours ; or a mixture of equal parts of green soap, oil of cade, and sulphur, or salicylic or pyrogallic ointments. The irritation set up is soothed and the process repeated. Mercurial plasters used in same way are useful.

Braun[4] touches the eczematous palmar areas with a few drops of **Caustic Potash** (grains xv to xxx of water), and then applies thrice daily a salve made of 4 grains of silver nitrate with 75 drops of liquid vaseline in 5 drachms of lanolin.

Holstein[5] in very obstinate cases of what he describes as neurotic reflex eczema gives **Ergotin** internally, and applies externally a 2 to 12 to 30 per cent. ointment of **Liquid Extract of Ergot.**

Doumer[6] reports highly satisfactory results from the employment of the **Electric Souffle.** He advises a machine giving sparks three inches long and an electrode with points for the breeze or brush discharge. Either pole can be used.

Here is the formula for a soothing paste strongly recommended by Berliner :—

℞ Oxide of Zinc		Œsypus	
Rice Starch	āā 4 grms.	Olive Oil	āā 3 grms.

To this various medicaments can be added, if desired.

Laughlin considers that **Thiol** has all the advantages of ichthyol without its odour, irritant quality, and dirtiness.

Cazenave and Rollet find that **Gallanol** is an active reducing agent on the skin, antiseptic and microbicidal, but not toxic like pyrogallol. In eczema it quiets itching, stops exudation, and causes rapid drying of the surface.

Eczema seborrhœicum.—Those who wish to possess themselves fully with Unna's latest views on eczema seborrhœicum can turn to the last edition of McCall Anderson's treatise on skin diseases or to Unna's article in the "Sammlung Klinischer Vörtrage," No. 79, 1893. The latter has been fully epitomized in most of the Dermatological Journals, and we make use here of Barendt's abstract in the "British Journal of Dermatology."

"For pityriasis capitis and the accompanying alopecia the following pomade is to be used twice a week, or more often; Hebra's spiritus saponis alkalinus being employed for removing crusts and preventing any caking of the pomade :—

℞ Sulphuris præcipitati . (by weight) parts 1 to 3
Unguenti pomadini . ,, ,, 30
M. S. Pomatum.

"In case the yellow colour of the sulphur is objected to, 2 to 5 per cent. resorcin pomade, with the addition of 1 per mille perchloride of mercury, or 1 per cent, carbolate of zinc, may be substituted. If defluvium capillitii be present, 2 to 10 per cent. of tincture of cantharides may be added to the sulphur pomade. For papular eruptions covered with crusts, scaly spots, circumscribed patches with a tendency to moisture, the treatment with paste is the most suitable :—

℞ Zinc Oxidi . . . (by weight) parts 6
Sulphuris præcipitati . . ,, ,, 4
Terræ Siliceæ . . . ,, ,, 2
Adipis Benzoati . . . ,, ,, 28
M. S. Pasta.

"This is to be carefully worked into the eruption, all crusts having been previously removed with Hebra's alkaline spirit of soap lotion.

"Should the skin show signs of irritation, zinc-gelatine or cold cream may be used intercurrently with the paste.

"Where hyperæmia is present, 5 to 10 per cent. of sulpho-ichthyolate of ammonium is added; where anæmia, 5 to 10 per cent. of resorcin (preferable to an increase of the sulphur).

"When there is marked epithelial proliferation, the above treatment must be alternated with a chrysarobin course :—

℞ Chrysarobini . . . (by weight) parts 5
Acidi Salicylici . . . ,, ,, 2
Ammonii Sulpho-ichthyolatis , ,, ,, 5
Paraffini Mollis . . . ,, ,, 88
M. S. Unguentum.

"This must be rubbed in twice a day, and woollen underclothing worn. Circumscribed patches may be afterwards covered by a thin layer of cotton-wool, gutta-percha tissue, and fixed by a muslin bandage.

"In certain cases, especially where the patient resides at a distance, resorcin evaporating lotion is of service :—

℞ Resorcini
Glycerini . . . . (by weight) āā parts 10
Spiritus . . . . ,, ,, 180
M. S. Lotio, To be diluted with four times the amount of water or chamomile-flower tea.

"This is to be used in the usual way ; in cases of universal seborrhœic eczema a combination woollen garment, soaked in an ordinary wash-hand basin half full of water, containing for adults 5 grains of resorcin, for children 2 grains of resorcin, is put on at night and the patient wrapped up between blankets. The following day the zinc-sulphur paste is to be applied.

"Of special forms of seborrhœic eczema, the moist eruptions of children's heads, the intertrigines, and rosacea seborrhœica, may be treated as follows. The first two require the alternate application of zinc-sulphur paste and zinc-ichthyol salve-muslin.

"Seborrhœic rosacea, in addition to the use of the zinc-sulphur paste, often requires the application of a decorticating paste :—

℞ Zinci Oxidi	4 parts	Resorcini	20 parts
Terræ Siliceæ	1 part	Adipis Benzoati	15 parts

M. S. Pasta Decorticans. To be used with care.

Audry,[7] has a long critical review on eczema seborrhœicum. In treatment it is necessary, he says, to distinguish typical forms from those with complications, such as eczematisation and pustulation. **Sulphur** may be considered as a specific, but must be applied with discernment. He employs rather stronger preparations than Unna, and in all cases washes the part twice daily with 1 in 1000 sublimate lotion before applying the ointment, and removes fat with warm soapy lotions. Sulphur baths are useful. In active exudating or pustulating cases he thoroughly cleanses and disinfects, and then finds a wet dressing of sublimate (1 in 1000 or 1500), well borne. Boric acid in powder or combined with some inert absorbing powder, or with a little sulphur, is very useful. When the eruption is dried, the sulphur ointment combined with 1 to 2 per cent. salicylic acid or boric acid or resorcin is called for again. Audry recommends the following paste :—

℞ Anhydrous Lanoline	40 parts	Olive Oil	20 parts
Vegetable Wax	40 parts	Sulphur	q.s.

Or glycerole of starch with sulphur.

REFERENCES.—[1] "Verhandlungen der Deutschen Dermatologischen Gesellschaft," p. 161, 1892 ; [2] "Journ. Cut. and Gen-Urin. Dis.," p. 99, 1894 ; [3] quoted "Journ. Cut. and Gen-Urin. Dis.," p. 133, 1894 ; [4] "La Semaine Méd.," No. 30, 1894 ; [5] "Monatsh. f. Prakt. Derm.," 1, 1894 ; [6] "Arch. d'Elect. Méd.," May, 1894 ; [7] "Ann. de Derm. et de Syph.," p. 761, 1894.

Synopsis.—(Vol. 1894, pp 8, 22, and 23.) **Alumnal** as dusting powder. **Losophan**, 1 – 2% solution in spirit and water, or 1% ointment for chronic eczema. **Myrrholin Cerate** for eczema of nostrils.

ECZEMA (Hands and Fingers).

Synopsis.—(Vol. 1894, p. 234). Oxides of Zinc, Lead and Mercury; also Tar, Sulphur, Ichthyol, Resorcin, Pyrogallol and Chrysarobin. Protection by gutta-percha tissue during day. As cheap pastes: (1,) ℞ Oxide of Zinc, 40%; Chalk, Lead Lotion, Linseed Oil, āā 20%; (2,) ℞ Oxide of Lead, 50%; Ordinary Vinegar, 75%: (3,) ℞ Oxide of Zinc, Sulphur, Chalk, Linseed Oil, Lime-water, āā 20%. For chrysarobin pencils: ℞ Chrysarobin, 10%; Lanoline, 30%; Wax, 60%; or: ℞ Chrysarobin, 10%; Salicylic Acid, 20%; Lanoline, 30%; Wax, 40%. Melt and pour into glass tubes. To increase the horny protecting upper layer of skin: ℞ Ung. Zinci, Resorcini, āā grm. 10·0; Terr. Siliceæ, grm. 2·0; M. ft. pasta.

EMPYEMA (Nasal). *William Milligan, M.D.*

Empyema of the Frontal Sinus.—On account of the late development of the frontal sinuses, this affection is rarely met with before adult life. The most frequent exciting causes are chronic inflammatory affections of the nasal mucosa, leading to occlusion of the naso-frontal duct, injuries, passage of insects into the sinus, eruptive fevers, and polypi developing within the sinus.

Usually only one sinus is affected, but cases occur in which the bony partition between the two becomes broken down (or it may not be properly developed), and so a purulent collection is found upon both sides.

Pain, which is at first localised to the glabella, may become more diffuse and at times is very severe, especially when there is retention of secretion. When the naso-frontal duct is patent, a purulent discharge may be seen upon rhinoscopic examination flowing over the anterior extremity of the middle turbinate body. Where, however, obstruction to the outflow of pus is present, accumulation takes place within the sinus and severe tension symptoms set in. Usually the abscess points at the upper and inner corner of the orbit, displacing the bulbus oculi downwards and outwards. Or pus may spread inwards and force an entrance into the cranial cavity, setting up diffuse purulent meningitis.

In the early stages the diagnosis is somewhat difficult, and such cases are frequently mistaken for severe supraorbital neuralgia. The presence of a purulent discharge trickling over the anterior extremity of the middle turbinated body, combined with a certain degree of fulness and discomfort over the corresponding sinus, especially when we can exclude the presence of antral empyema, points to the existence of frontal sinus disease. Transillumination with a small electric lamp is useful. The lamp (see *Fig.* 2), should be covered with a slightly projecting rubber cap. The examination should take place in an absolutely darkened room, or a thick black cloth (such as is used by photographers) should be thrown

over patient's and observer's heads, just as in the examination for maxillary antrum empyema. If the lamp be placed in a healthy subject immediately under the supraorbital ridge or over the sinus, the corresponding sinus will be illuminated as high up as the supraciliary ridge. Where, however, pus is present an opaque area will be found. Catheterisation through the infundibular passage may be tried and the sinus washed out. The method is however difficult and uncertain. The illustration (*Fig.* 3), given below, shows the form of irrigating cannula in use for this purpose.

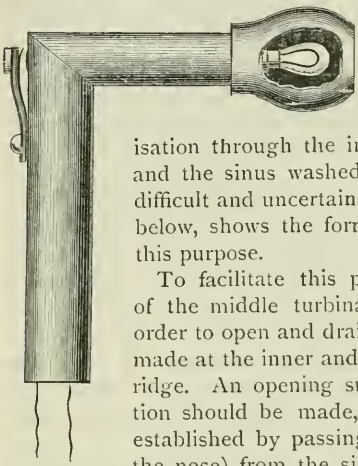

Fig. 2.—The Lamp.

To facilitate this proceeding the anterior extremity of the middle turbinated body may be removed. In order to open and drain the sinus an incision should be made at the inner and upper border of the supraorbital ridge. An opening sufficient to enable proper inspection should be made, and a free passage to the nose established by passing a trochar (guided by a finger in the nose) from the sinus to the middle meatus. Mayo Collier strongly recommends a vertical incision over the centre of the affected sinus. The edges of the incision should be retracted, the periosteum raised, and an opening effected into the sinus by a specially constructed small trephine. He advises also the passage of a rubber drainage tube into the corresponding nostril, and when syringing has to be performed the stretching of the tube so that a free passage may be obtained.

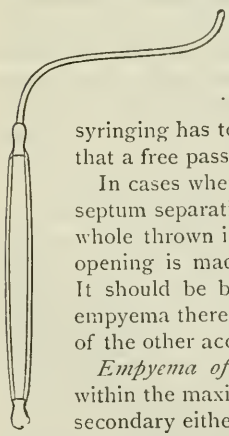

Fig. 3. Irrigating Cannula

In cases where both frontal sinuses are affected, the bony septum separating the two should be broken down and the whole thrown into one large cavity, while a sufficiently large opening is made into the nose to ensure efficient drainage. It should be borne in mind that along with frontal sinus empyema there frequently co-exists disease of one or more of the other accessory sinuses.

Empyema of the Maxillary Sinus.—Purulent collections within the maxillary antrum are in the vast majority of cases secondary either to diseased conditions of the nasal mucosa or to dental irritation. Authorities are still at variance as to which of these two causes is the most frequent. Certain cases

are due to traumatism, *e.g.*, careless manipulation of the galvano-cautery within the nasal passages, while others result from such affections as measles, scarlet fever, syphilis, influenza, etc. As a rule the affection is unilateral. Lichtwitz[1] has, however, recently called attention to the frequency of bi-lateral empyema, having in thirty-one cases (forty-three punctures made through the inferior meatus) found double antral abscess twelve times. Improvements in diagnostic methods have undoubtedly shown this affection to be more frequent than was formerly supposed to be the case. The flow of pus may be continuous, usually however, being intermittent, depending to some extent upon the condition of the surrounding parts and the position of the patient's head. The secretion is, as a rule, fœtid, perceptible to the patient and either purulent, muco-purulent, or in rare instances caseous. The flow takes place from the region of the middle meatus over the anterior extremity of the middle turbinate body; at times, however, it travels backwards into the post-nasal space. In acute cases pain may be complained of. In chronic cases there may or may not be a sensation of discomfort over the antral area. Occasionally a pulsating spot may be seen in the middle meatus, which by some is considered pathognomonic of antral empyema. Within the nose hypertrophic states of the nasal mucosa and polypi may be found. In some cases these are primary conditions, in others secondary to antral disease. Other accessory sinuses may be affected at the same time. MacBride has called attention to the presence of a marked redness of the gingival mucous membrane, corresponding to the affected side.

Great difference of opinion still exists as to the best means of establishing a correct diagnosis. The presence of a unilateral nasal discharge of fœtid odour flowing from the middle meatal region, and increased by a dependent position of the head, is always highly suggestive of antral abscess. Catheterisation through the natural opening, and washing out the cavity, are recommended as methods both of diagnosis and treatment. The ostium maxillare is, however, somewhat difficult to find. Injections of solutions of hydrogen peroxide have also been highly spoken of, the observer watching carefully for the characteristic bubbling and frothing which takes place when this drug comes into contact with pus. Transillumination, although not of absolute value, is a very important aid to diagnosis.

To effect this an instrument (*Fig* 4) consisting of a small electric lamp of about 4 candle power, fitted to a Türck's tongue depressor, is placed within the patient's mouth, the patient sitting in a room pre-

viously made quite dark, or a dark cloth being thrown over both patient's and observer's heads. The electric current is now switched on, and in healthy subjects the cavities are immediately illuminated. This finds expression more especially in the presence of a bright semilune immediately under the lower eyelid, and in the existence of a bright pupillary glow. Burger emphasises the value of subjective luminous sensations as being of almost greater diagnostic value than the pupillary glow. In cases of empyema, this bright semilune is absent, the whole side of the cheek appearing dark. This opacity contrasts strongly with the brilliancy upon the opposite side. In addition, when the lamp is in the mouth, intra-nasal examination with the speculum shows in a healthy subject the inferior and middle turbinated areas clearly illuminated. In cases of antral empyema, however, the whole area of the cheek corresponding to the antrum is in dark shadow, no bright semilune being seen either under the infra-orbital ridge or within the nose.

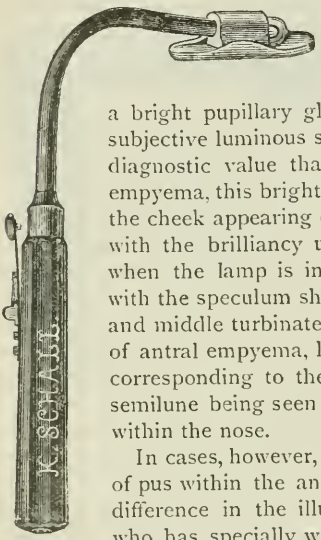

Fig. 4. Turck's Tongue Depressor, with Lamp.

In cases, however, in which there is only a small amount of pus within the antral cavity, there may be no obvious difference in the illumination of the face. Davidsohn,[2] who has specially worked this subject up, says that where only a small quantity of pus exists the antrum may be illuminated by rays of light thrown from the turbinated bodies and adjoining nasal structures into the cavity on a level higher than that of the existing fluid, while the eye of the same side remains dark.

Reference to the illustration (*Fig.* 5), on opposite page, will explain this.

The presence of growths within the antrum, excessive thickness of the bones, very small antral cavities, etc., may prevent the passage of rays of light, and so give rise to opacity below the eyelid, while, on the other hand, asymmetrical states of the hard palate, highly arched high palates, abnormalities in the size and shape of the antrum, the consistency and extent of the fatty layer of the orbits, and the physical condition of the bulbus oculi (Mygind), may prevent the eye from being illuminated. The transillumination test is therefore not to be solely relied upon, for in a given case opacity may exist without the presence of an empyema, although an empyema cannot exist without the presence of a suborbital umbra. In those cases, where, with a unilateral nasal

discharge coming from the region of the middle meatus, no bright semilune is found under the corresponding eyelid, the chances are highly in favour of the presence of an antral empyema. The only reliable diagnostic test is the puncturing of the cavity and the appearance of pus. Exploratory puncture may be made either through the alveolar margin, or through the lateral nasal wall. To puncture through the external wall of the nose, the mucous membrane should be well painted with a 10 per cent. solution of cocaine.

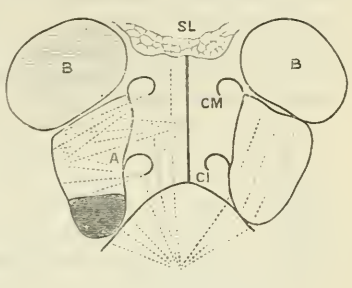

Fig. 5. (After Davidsohn.)

A, Antrum. *B*, Eye. *C I*, Inferior turbinated body. *C M*, Middle turbinated body. *S L*, Ethmoidal cells. The dotted lines represent the rays of light proceeding from an electric lamp placed in the mouth. Upon the healthy side—the unshaded side—the rays of light are able to pass directly through the antral cavity and hence illuminate the orbit, producing a well marked pupillary glow. Upon the affected side the rays of light proceeding from the lamp in the mouth are unable to pass through the layer of pus in the antral cavity, and hence the orbit remains dark and there is no pupillary glow. Some of the rays, however, which pass directly up into the corresponding nasal passage impinge upon the turbinated bodies, and are thence deflected across the antral cavity on a level higher than that of the contained fluid, and consequently are able to produce a moderate amount of infra-orbital translucency. Hence, in a case in which a moderate degree of infra-orbital translucency is present, but in which no pupillary glow exists, the inference may fairly be that the antrum contains fluid, *e.g.*, pus, although the amount may be small.

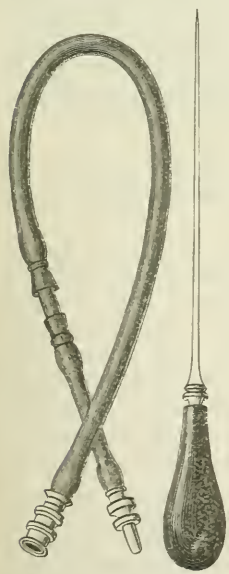

Fig. 6.—Lichtwitz's Trochar and Cannula.

A Lichtwitz's trochar (*Fig.* 6) is now thrust through the bony parietes of the middle meatus in a direction slightly downwards and outwards. Pus in the cavity will now flow out through the cannula, or a stream of some antiseptic fluid may be injected when the pus, if present, will be found to flow into the region of the middle meatus.

The treatment of acute or chronic cases of antral empyema resolves itself into affording some proper means of egress for the contained purulent exudation; in other words, the establishment of efficient surgical drainage.

Hartmann and Störck advocate washing out the cavity *per vias naturales*, and in order

to simplify this Heryng has suggested removal of the whole or part of the middle turbinated body. An opening may be made through the alveolar margin (if necessary after withdrawal of a tooth), the cavity washed out, and a drainage tube inserted.

The accompanying illustration (*Fig.* 7) represents the form of drainage tube and irrigating cannula, which the writer has of late used with considerable success.

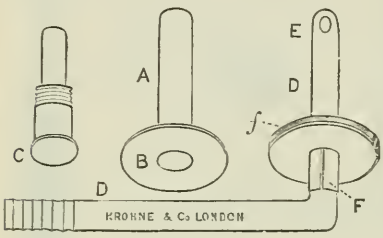

Fig. 7.

The antral tube *A* is passed into the alveolar opening, the flange *B* being subsequently attached to a dental plate. *C* is a screw-plug, which is made to project sufficiently far down to enable the patient to readily grasp it between the thumb and forefinger when required to be removed, but not so far as to cause the teeth of the lower jaw to touch it when the jaws are closed. The tube is made of silver, and is gold-plated.

D is a silver rectangular cannula, of such a size as to accurately fit the tube *A*. Its upper extremity, *E*, is perforated by three foramina. *F* is a movable platform, carrying a thick rubber washer, *f*. The distal extremity of the cannula is in communication with a glass (containing the fluid for irrigation) by means of a long rubber tube. When in use the screw-plug *C* is removed; the fluid from the reservoir is sucked through the cannula until a syphon action has been established. Temporary pressure is then made upon the rubber tube just at its attachment to the cannula. The cannula is now run up inside the antral tube, and the platform *B* raised so as to abut accurately against its flange. The patient's mouth being now closed upon the cannula, the head is bent forward, and the pressure upon the rubber tube taken off. The syphon action is thus at once re-established, the irrigating fluid flowing from the reservoir into the antrum, and out through the corresponding nasal passage. In this way thorough cleansing of the cavity may be secured, and can be conducted with ease by the patient.

An opening may also be made into the cavity through the canine fossa, an opening of such a size as to permit the introduction of, and exploration with, the finger.

According to Robertson[3] this method is by far the most satisfactory. Under chloroform an incision is made at the junction of the cheek and gum down to the bone over the canine fossa. The periosteum and soft parts are cleared away with an elevator to the extent of the superficies of a shilling. With a chisel an opening is made large enough to admit the finger. The cavity can now be examined with the electric search-light. A drainage tube is then placed along the floor of the cavity (the opening being made flush with this) and retained for a few days, when a lead spigot is inserted and retained as long as is necessary.

The cavity may also be opened through the inferior nasal meatus, as originally suggested by Mikulicz. Scanes Spicer[4], at the Bristol meeting of the British Medical Association, recommended an opening being made through the canine fossa according to Robertson's method, and

one or more large perforations through the nasal wall by means of Krause's trochar. In this way not only is there an opening made in the anterior wall, but a permanent accessory ostium maxillare is formed in the inferior meatus. The antrum and nose are irrigated with boracic lotion and the cavity of the antrum packed with creolin gauze for forty-eight hours, the gauze being made to tightly fit and distend the bucco-antral opening until the tissues around are matted together and the passage established. After forty-eight hours the gauze is removed, and *no form of mechanical drain* is used. Free irrigation is practised thrice daily with a Higginson syringe, and in addition the patient is instructed to do two things ; first, to frequently blow air through the antrum from the nose to the mouth, and *vice versâ*, and also to pass some antiseptic lotion from the mouth through the antrum to the nose. The natural opening may be enlarged either by means of the galvano-cautery or by some suitably made drill. This is, however, a method seldom practised. because it is difficult to perform, and also because the opening not being at the most dependent point drainage is imperfect.

Suppurative Disease of the Ethmoidal Cells usually occurs in consequence of a previous catarrhal rhinitis, or as the result of occlusion of the ostium ethmoidale from the presence of nasal polypi or hypertrophic rhinitis. It occurs also as a complication of facial erysipelas, or in conjunction with suppurative disease of other nasal accessory sinuses, *e.g.*, maxillary, frontal or sphenoidal. Syphilitic affections of the nasal framework are also frequent exciting causes. The readiness with which the bone is affected and the proximity of the ethmoid to the base of the brain render this affection a peculiarly dangerous one.

Pain referred to the root of the nose radiating outwards along the infra-orbital ridge is a common symptom. The presence of a purulent discharge from the middle meatus is an early and constant sign. The discharge may present anteriorly, or may be seen at times on rhinoscopic examination reaching into the post-nasal space. Owing to the destruction of the olfactory cells the fœtor of the discharge is not so annoying to the patient as in cases of antral abscess. Besides the presence of discharge in the middle meatal region rhinoscopic examination usually shows the ethmoidal cells to be distended to a greater or less degree. Where marked distension has taken place the os planum of the ethmoid is pushed outwards into the orbital cavity, producing such ocular symptoms as exophthalmos, diplopia, narrowing of the field of vision, etc. In addition, masses of polypoid granulation tissue may be seen in the middle meatus. Examination with the probe frequently reveals the presence of bare and carious

bone. Grünwald strongly recommends examination with the probe in such cases. Transillumination of the ethmoidal cells is not of much practical value. If an electric lamp (see *Fig.* 2) be placed at the inner and upper angle of the orbit in a healthy subject, two strips of illumination parallel to each other will be seen one on each side of the middle line in the cartilaginous area of the nose. In diseased conditions of the middle turbinals, with pus flowing from their neighbourhood, these bright areas are replaced by dark shadows.

Charters Symonds[5] draws attention to a certain gelatinous degeneration of the middle turbinated body in these cases, which he says he has not found in cases of frontal sinus disease.

The main principle of treatment is the securing of free drainage. Hypertrophic states of the mucosa should be treated in the usual way. Masses of granulation tissue should be removed with forceps, and the parts carefully curetted. Antiseptic lotions or coarse nasal sprays should be employed to get rid of pus, etc. Greville MacDonald[6] calls attention to a plan he has recently found of much service. The patient's head is allowed to hang over the edge of a couch so as to assume an inverted position while the nasal cavities are filled with some non-irritating antiseptic lotion. In this way the summit of the nasal chamber is thoroughly irrigated. This method must be used with caution and the patient kept carefully under observation, as severe neuralgia and rapid rise of temperature have been known to follow its employment.

The cells may be opened either by means of gouge or curette, or a small Curtis's nasal trephine *(Fig.* 8*)*, driven by an ordinary surgical engine, may be employed.

Fig. 8.—Curtis's Nasal Trephine.

When intra-nasal treatment fails to effect a cure, operation with external incision should be performed. Owing to the fact that spontaneous discharge of pus in such cases may take place through the orbit, Charters Symonds suggests an incision being made at the inner extremity of the upper eyelid in order to reach the seat of the disease. Grünwald also recommends as a typical operation for empyema of the ethmoid cells, an accurate incision under and parallel with the eyebrow, elevation of the periosteum, and opening of the bone by means of a small chisel. Ollier's operation may also be performed.

Empyema of the Sphenoidal Sinuses.—Owing to the deep position of

these sinuses a positive diagnosis of the existence of chronic suppurative disease of their lining membranes is difficult to establish. The proximity of the posterior ethmoidal cells increases the difficulty. The affection at times forms in the course of a catarrhal rhinitis or naso-pharyngitis. Syphilis, scrofula, and extension of inflammation from adjoining sinuses, are also occasional ætiological factors. As the openings of the sinuses are not in the most dependent position the flow of pus is usually intermittent. Rhinoscopic examination reveals a purulent stream at the posterior part of the nasal fossæ in the space separating the middle turbinated body from the septum; but on account of the frequent tumefaction of the posterior ends of the turbinate bodies, it is often impossible to say whether the flow takes place from the sphenoidal or from the posterior ethmoidal cells. Herzfeld calls attention to a swelling close to the septum, as being of value in the diagnosis of these cases. Deep seated pain usually is present, the amount varying with the degree of the distension of the sinuses. Pressure upon the orbital contents producing exophthalmos, and at times complete blindness, are occasional symptoms. Schäffer has noticed in chronic cases hyperplasia of the nasal mucosa, pharyngitis sicca, and the presence of polypoid hypertrophies in the post-nasal space.

Extension of inflammation may take place towards the cranial cavity, eventually leading to suppurative meningitis.

The main indication in the way of treatment is to secure free drainage. The sinuses may be opened through the anterior nares, or from below through the post-nasal space. With the aid of a rhinoscopic mirror, a specially long and slender gouge may be thrust along the nasal passage and the sinus entered through its anterior wall. Care must be taken that the instrument be not thrust too far upwards for fear of entering the cranial cavity. Dundas Grant[7] recommends catheterisation through the natural orifice by means of Lichtwitz's specially constructed cannula. In order to secure freer drainage he also suggests the removal of the posterior end of the middle turbinated body. The inferior wall of the sinus may be perforated and curetting performed by a specially constructed trochar or spoon introduced into the post-nasal space and thrust carefully upwards. After a free opening has been made, regular flushing with antiseptic lotions should be practised.

REFERENCES.—[1] "Journ. of Laryngology," etc., 1892, p. 187; [2] "Berliner Klinische Wochenschrift," 1892, Nos. 27 and 28; [3] "Journ. of Laryngology," etc., 1892, p. 110; [4] Ibid., 1894, p. 666; [5] Ibid., 1894, pp. 668, 677; [6] Ibid., 1894, p. 680; [7] Ibid., 1894, p. 684.

ENCEPHALITIS.

Synopsis.—(Vol. 1894, p. 240.) Crocq applies 6 Leeches behind ear and: ℞ Calomel, 1 grm.; Aloes, 30 grms.; Sugar, q.s. M. ft. pulv. iij. *Sig.*—1 every two hours. Later, **Iodide of Potassium** is administered and the leeches removed.

ENDOMETRITIS.

Gonorrhœal.—Lantos[1] gives good advice as to the care with which uterine therapeutics must be applied in cases of gonorrhœal infection. When the uterine cavity is clearly involved, the physician must at once set to work to cure it lest the disease spread to the tubes. Lantos here, however, warns us not to be too enthusiastic. The hasty use of the **Curette,** or even of **Carbolic Crystals, Solid Chloride of Zinc,** and other powerful caustics, has set up the gravest complications. Even more gentle intra-uterine medication is perilous when the appendages are already involved in the infectious inflammatory process. Hence, should there be the least tenderness in either lateral fornix the patient must be kept at rest for a few days, warm injections, etc., being administered. Whenever the condition of the genital tract shows that the endometrium may be safely treated, a Playfair's probe dipped into a 1 per cent. **Solution of Sublimate** should be introduced into the uterine cavity. A still better method is the washing out of the uterus with a 1 per cent. **Chloride of Zinc** solution by means of a double current catheter. When the cervical canal is made sufficiently wide the uterus must be plugged with iodoform gauze.

Senile.—Skene[2] points out the resemblance borne by this affection to incipient carcinoma. Discharge is the first symptom, together with pain and general constitutional disturbance, if the cervix is obstructed. The discharge is sero-purulent, less glutinous than that of leucorrhœa, and microscopic examination is necessary to differentiate it from that of specific disease and carcinoma. Gastric disturbances and a dry bronzed skin often impart a cachectic appearance suggestive of malignant disease. From adenoma senile endometritis is distinguished by the absence of metrorrhagia. If the disease does not extend beyond the cervix **Astringent Douches** are efficient treatment, but should the whole of the interior of the uterus be involved the free application of **Iodoform** is necessary. The connection of displacements or cervical stricture is important if these conditions are present, and for the latter gradual dilatation and drainage are required, avoiding rapid dilatation on account of the ease with which the senile uterus may be torn.

REFERENCES.—[1]"Brit. Med. Journ."; [2]"Amer. Journ. of. Obstet," April, 1894.

Synopsis.—(Vol. 1894, p. 240.) Drainage of uterus with silkworm gut or india-rubber tubes. For the latter a tent or dilator is required, and vagina is plugged with **Iodoform Gauze** daily after uterine injection. For cervical endometritis **Scraping** of endometrium and **Plugging** with iodoform gauze.

ENTERIC FEVER. (See also "Fever" and "Typhus.")

Synopsis.—(Vol. 1894, p. 242.) **Cold Baths** (Osler). Eliot gives **Calomel**, 10 grs., every other day until four doses have been taken, and a mixture containing: R Ac. Carbol. ℥j; Tinct. Iodi ad ℥iv. *Sig.*—gtt. 4 in a wineglassful of water 4tis horis. Should the bowels not move after the calomel, **Sulphate of Magnesia** may be used in drachm doses. Werner advises 1% **Chloroform Solution**, ℥ss every one or two hours night and day. Richardson advises: R Methylene Bichlor., ℥j; Solut. Hydrogen. Perox. (10 vols.), ℥j; Ac. Hydrochlor. dil., ♏ 30; Aq. dest. ad ℥vj; M. *Sig.*—$\frac{1}{15}$ part in half tumbler of pure water 3tis hor. **Boracic Acid**, 10 to 60 grs., daily after an initial dose **Castor Oil**, with 5 to 20 drops **Turpentine**; **Salol**, ·35 to 1·5 gramme daily.

ENTERITIS.

Germain Sée[1] lays down rules for the treatment of the troublesome mucous diarrhœa which complicates peri-uterine inflammation. The three indications are to empty the bowel, to allay the pain, and to check fermentation. In cases in which the complication is not very severe a tablespoonful of **Linseed** should be taken three times a day before meals. The seed should first be soaked for a few minutes in a quarter of a tumblerful of cold water. Sée has known this treatment answer in thousands of patients, and there seems to be no fear of impaction of the highly soluble seeds in the cæcum or appendix. Should the bowels fail to act, a pill, consisting of 1 grain or more of solid extract of **Hydrastis** to 3 grains of powdered senna leaves, taken three times daily after meals, will prove a good aperient, which will not prevent the patient from attending to her social and domestic duties. Saline and mineral water purgatives are, in Sée's opinion, hurtful, being followed by obstinate constipation. Occasional doses of **Castor Oil** are needed, and the American practice of giving large doses of **Olive Oil** is often beneficial in muco-enteritis. For calming the pain morphine and atropine should be avoided, as they cause constipation and loss of appetite, the latter insuring invalidism by impairing nutrition. The bromides of potassium and sodium irritate the stomach and cause debility. **Bromide of Strontium** or **Calcium** in about 20-grain doses freely dissolved in water and taken during meals is very efficacious in the muco-enteritis of uterine disease. To avoid any chance of debility being caused by the bromide, about 10 grains of **Chloride of Calcium** added to 10 of **Bromide of Calcium** should be substituted for the above prescription. **Menthol** dissolved in alcohol and water is the best remedy when very severe pains set in. As to the

neutralising of fermentation, flatulence is best cured by **Phosphate of Soda** mixed with **Salicylate of Soda,** or by doses of **Borax.** Sée has little faith in benzonaphthol either for the muco-enteritis here considered, or for any other kind of gastro-intestinal irritation.

Revilliod[2] has had good results in the treatment of membranous colitis by the use of copious injections containing **Bismuth.** The injection he uses is as follows : Subnitrate of bismuth, 10 parts ; salicylate of sodium, 10 parts ; mucilage, 500 parts. The quantity prescribed is ½ a litre. The colon is first of all cleared out with an enema containing **Castor Oil** or **Ipecacuanha,** followed if necessary by an injection of a solution of **Boric Acid.** When the bismuth injection is to be given, the patient is placed on his back with the buttocks a little raised, and is directed to retain the injection for twenty-four hours if possible ; if this cannot be done a smaller quantity must be used for the injection. As a rule, the bismuth is not to be seen in the first stools passed. It appears after a few days as earthy lumps, and the stool in which it is contains no mucous scraps. Slight constipation is produced by the treatment but no other inconvenience. The treatment was also successful in chronic dysentery, and in other conditions in which there was reason to suspect ulceration of the large intestine. The mucilage prescribed is "de pépins de coing," quince pips.

REFERENCES.—[1] "Brit. Med. Journ.;" [2] "Lyon Médical," Dec. 24, 1893.

ENURESIS. *J. Madison Taylor, M.D., Philadelphia.*

MacAlister[1] gives the treatment of an obstinate case which had defied all former treatment. He prescribed :—

℞ Liquoris Atropinæ Sulphatis Liquoris Strychninæ Hydrochloratis	ʒjss ♏ xlv	Syrupi Aurantii	ad ʒj

Sig.—5 drops of the syrup to be taken in a tablespoonful of water at 9 p.m. ; to be increased as directed.

The directions were : That no drink should be taken after 6 p.m. that the drops should be taken at 9, that the boy should go to bed after emptying the bladder at 10 ; that he should be wakened to pass water at 12 when the parents retired, and again at 6 a.m. when the servants rose. 5 drops of the syrup were to be taken nightly for three nights, 10 drops for the next three, 15 for the next three, and so on until in the fourth weeks 30 drops were taken. During this time no "mishap" occurred ; there was considerable dilatation of the pupils, and some dryness of the tongue and throat, but no untoward symptom. The dose was continued at 30 drops for a week, when enuresis again took place. The dose was again increased every three nights by 5

drops at a time until 50 drops (representing about $\frac{1}{10}$ grain of sulphate of atropine) were being taken nightly. Accommodation at this time was so affected that the boy could not see to write, though he was perfectly well in other respects. The dose was increased during the three weeks up to 60 drops, and then decreased 10 drops every three nights until after nine weeks' treatment it was discontinued, and the trouble never returned.

Where[2] the incontinence seems to depend upon atony of the sphincter, **Electricity** may be used, the negative pole being placed in the urethra and the positive pole over the pubes. Very feeble currents may be passed for from one to five minutes once a week. Generally twelve to fifteen applications of this kind suffice. It is also well to administer **Strychnine** carefully in such cases, or the following may be used :—

℞ Ext. of Nux Vomica	gr. iv	Powdered Geranium	gr. xv
Reduced Iron	gr. xv		

Make into twenty pills and take 1 to 3 a day.

Or we may prescribe :—

℞ Ergotin	gr. viij	Powdered Aloes	gr. ss

Take 1 pill once or twice a day.

In those cases where there is irritability of the bladder, the treatment with **Belladonna** is applicable, and the following may be used :—

℞ Ext. of Belladonna	gr. iij	Castor	gr. xv
Camphor	gr. xv		

Make into twenty pills and take 1 at night.

Or this prescription may be used in the form of a suppository. In still other instances, **Bromide of Potassium,** in the dose of 30 grains at night, may be employed ; or 10 to 15 grains of **Antipyrin.**

Or the following prescription[3] may be used :—

℞ Tincturæ Belladonnæ		Tinct. Rhois Aromaticæ	āā f℥j
Tincturæ Cubebæ	āā f℥ij	Tincturæ Cascarillæ	f℥ij
Tincturæ Nucis Vomicæ			

Sig.—12 drops at bedtime for a child from seven to ten years.

REFERENCES.—[1] "Therap. Gaz.," Aug., 1894 ; [2] "La Tribune Médicale," May 26, 1894 ; [3] "Med. Press," Feb. 21, 1894.

ENURESIS IN CHILDREN (Nocturnal).

E. Hurry Fenwick, F.R.C.S.

Freud[1] states, on examining children affected with nocturnal incontinence of urine, he discovered that about 50 per cent. of them exhibit an associated symptom that has not previously been described,

namely, a hypertonic condition of the crural adductors. To elicit the symptom the child is seated with its legs on a table; its feet are then grasped, and an endeavour is made to separate them as widely as possible in a horizontal direction. In a typical case the adductor spasm at first is considerable, but soon yields; on releasing the feet the legs spring back into contact. Spasticity also is found in the quadriceps extensor on attempting suddenly to flex the knee. The resistance here again is very pronounced at first, but quickly subsides. If flexion be then repeated only slight extensor tension is observed. The deep reflexes are moderately increased in these cases; the muscles are firm and well developed; gait is natural and no other abnormality is present in the affected limbs. To a certain extent the spastic condition can be overcome by voluntary effort on the part of the patient; for instance, if the child be required to relax the adductors, rigidity temporarily disappears from them, although it continues in the extensors. As the phenomenon occurs in boys quite as frequently as in girls, and very rarely exists in normal children, Freud considers that it is independent of emotion, such as fear or shame. He has been able to exclude spastic paraplegia and epilepsy from all his cases. They have not shown any fixed relationship between the intensity of the hypertony and the degree and duration of the incontinence. Often he has seen the spasticity persist after the enuresis has been cured. He suggests that excessive spinal innervation of the detrusor and of the crural muscles may be a factor in the combination of symptoms.

REFERENCE.—[1] "Brit. Med. Journ." Epitome, p. 93, Dec. 9, 1893; "Neurol. Central.," Dec. 21, 1893.

Synopsis.—(Vol. 1894, p. 247.) **Atropine** and **Strychnia** along with or alternated with **Ergotin** or **Tr. Cantharides**. **Hyocine Hydrobromate** is sometimes better than **Atropine**, and is well combined with **Camphor Monobromide**. To steady and regulate vascular conditions, **Digitaline**, **Strophanthine** or **Sparteine** are valuable.

EPIDIDYMITIS.

Rollet[1] holds that when epididymitis occurs as a complication of gonorrhœa, irrigation of the entire urethra should not be intermitted, since otherwise there is danger of the second testicle becoming involved. The best treatment, in his opinion, is **Salicylate of Sodium**, 1½ drachms daily, or **Tincture of Pulsatilla**, 10 drops three times daily. The action of this agent is not as constant as that first named. Refrigeration is the best means of allaying pain; this is produced either by application of ice to the inflamed parts or by the spray of **Chloride of Ethyl**. The latter must be used with caution, on account of the sensitiveness

of the skin of the scrotum. Reclus recommends the application of compresses of warm water.

M. Balzer and M. Lacour[2] stated that they had obtained excellent results in the treatment of blennorrhagic epididymitis with **Guaiacol**. On the skin of the inguinal region, pure guaiacol could be applied; on the scrotum it was better to employ an ointment of from 2 to 5 parts of guaiacol to 30 of vaseline. One of the first effects of the application of this ointment was a rather sharp burning, lasting for about ten minutes; then the patient felt a sensation of heat, and almost immediately the pain disappeared, at least for three or four hours, and sometimes it did not return. Ordinarily it was necessary to make two applications on the first day, but after the third day there was no longer any pain. The applications were then discontinued, for they did not seem to exert any very decided resolvent action upon the inflammatory infiltration of the epididymis.

Scharff[3] employs **Electricity**, even in the acute stage, applying the anode to the lower part of the scrotum. The patient being in the dorsal position, an electrode of 50 to 60 c.m., and with a maximum current of $\frac{1}{2}$ m.a., is employed, the duration of the application being three minutes on the first occasion; this is afterwards increased to five and ten minutes, the increase being very gradual. The weak constant current thus employed should be carefully gauged with a sufficiently sensitive galvanometer, and the current closed insensibly with the aid of a rheostat. No unpleasant sensations should be thus produced, but the patient will subsequently on palpation be able to observe a considerable diminution or total disappearance of the tenderness which had previously existed. While in the same position a suitable suspender is applied, and the patient then allowed to walk about. Towards the seventh day the current can be increased to 3 m.a., the same electrode, however, being still used for a few days, when it can be somewhat increased in size. The swelling at first reappears to some extent after each application, but usually diminishes gradually in three or four days. The cathode is placed above the groin and on the abdominal wall. By this treatment rest in bed can usually be dispensed with, the other advantages over the older methods being rapid and marked relief of the pain from the first, and greater rapidity in the disappearance of the swelling.

REFERENCES.—[1]"Med. Press and Circ.," May 23, 1894; [2]"L'Union Médicale," April 10, 1894; [3]"Centralb. f. Krankh. d. Harnund Sex. Organe. i," 1894.

Synopsis.—(Vol. 1894, p. 249.) Externally, **Nitrate of Silver Ointment**, 1 in 10.

EPILEPSY. *Allan McLane Hamilton, M.D., New York.*

Miller[1] reports the case of an epileptic man which was undoubtedly due to the contraction of the flexor muscles of the right arm and palmar fascia of the hand. Besides this there was a preputial adhesion. When the latter was slit up and the palmar fascia stretched, the hand being subsequently put in a splint, he recovered completely and the attacks at once entirely disappeared.

Bromoethylformine, a derivative of formol, is used by Bardet[2] in doses of 30 to 60 grains. It has been found by Féré to be an excellent substitute for the potassium salt, especially where there were idiosyncrasies upon the part of the patient against the latter. Its advantages are that it is not followed by any eruption, and, in fact, when given in combination with bromide causes a disappearance of existing acne.

Hern,[3] at a meeting of the Ophthalmological Society, 1893, reported a case where epilepsy had been cured in a hypermetropic patient by the use of proper reading glasses for the relief of the strain of the ciliary muscle.

Among the new vegetable remedies may be mentioned the tincture of simulo, hydrastin, hyoscin, duboisine. **Simulo**, which is the fruit of a South American plant, *Capparis corriacca*, is extensively used in Peru and Bolivia as an anti-spasmodic, and has been administered in doses of 3 to 5 grains daily in seven cases of epilepsy by Hale White, of London, with gratifying results. **Hyoscin** has been used by Nagy[4] in epileptic attacks of a hysterical form, and this author has emphasized the fact that it never produces grave intoxication, and can be given for a long time without losing its power. He uses it during the paroxysms in doses of 1 milligramme given subcutaneously. Cividally and Gianelly have treated epilepsy by injections of from ½ to 1½ milligrammes of the neutral **Sulphate of Duboisine** inserted at the shoulder or abdomen. The local effects of the injection are disagreeable, as they are apt to produce more or less pain which lasts sometimes twenty four hours. In violent attacks the effects were best shown, but the most important results were obtained in cases of psychic epilepsy where the amelioration was rapid and lasting.

REFERENCES.—[1] "Edinburgh Med. Journ.," July, 1893: [2] "Les Nouveaux Remèdes," April 24, 1894; [3] "Brit. Med. Journ.," Sept. 30, 1893; [4] "Croosi Netilap," No. 41-44, 1893; [5] "Riforma Medica," No. 27, 28, 1894.

[*Editorial.*

Darby[1] states that in cases due to trauma after the use of the trephine or scalpel, the patient should be kept on medical treatment for at least two years to prevent a return of the trouble. It is in this class of cases that we may reasonably expect good results. **Bromide of Potassium,**

in full doses, has given the best results, but of late a solution of **Bromide of Gold** and **Arsenic**, given in 5 to 10-drop doses, has given satisfaction. The patient should, if possible, be induced to live a temperate and systematic life, sleeping regularly, eating moderately, and keeping his digestive and excretory organs in a healthy condition. Especially is it necessary for him to abstain from the excessive use of tobacco and alcoholic stimulants.

Synopsis.—(Vol. 1894, p. 249.) **Cold Shower or Sponge Baths** daily. **Warm Wet Compresses** to head and genitals if brain is anæmic, or **Cold Compresses** if head is congested. **Opium** in progressive doses (Flechsig) for six weeks, followed by **Bromide of Potassium** in 7½ gramme doses daily, and gradually diminished. Féré uses **Arsenic, Naphthol** and **Bismuth Salicylate** for bromide acne. **Nitro-glycerine**, gr. $\frac{1}{100}$, hypodermically (Bates). ℞ Sodii Biborat., gr. 200; Sodii Bromid., gr. 50; Syr. Simp., ℥j; Aq. ad ℥x. *Sig.*—℥j t. d. ex. aq. p. cib. **Alkaline Baths** daily, and inunction with **Vaseline** relieve erythema due to borax. **Duboisine** ·0004 gramme, hypodermically (Albertoni). *Pasteur's Anti-rabid Treatment.* Mixture of the three **Bromides**—2 of **Potassum**, 2 of **Sodium**, and 1 of **Ammonium**, which may be given effervescing by means of **Carbonate of Sodium** and **Citric Acid**. Intolerance of bromide may be overcome by small doses of **Iron** or **Arsenic** and attention to the general health. **Chloralose** may be used up to 22 gr. doses (p. 13).

EPISTAXIS.

Kohn[1] advises that in the case of a patient giving a history of repeated bleedings without any sufficient exciting cause, a most searching examination of the nose and naso-pharynx is essential; if an erosion or varicosity be found, as it frequently is, on the lower anterior portion of the cartilaginous septum, this should first be dried with absorbent cotton and then cauterized with a saturated solution of **Chromic Acid**, as advised by Bosworth and Bresgen. Chiari claims to have found such a lesion in seventy out of eighty-one cases of habitual nose-bleed, and advises the **Galvano-cautery** beyond all other measures. The writer has seen the galvano-cautery cause nose-bleed so frequently that he hesitates to recommend it in these cases to the general practitioner. Angiomatous growths have been the cause, in some cases, of such profuse and repeated hæmorrhages as to bring the patient to the verge of syncope; their radical destruction by the flat galvano-cautery is effectual in checking the recurrence of bleeding. Tumours, vascular polypi, adenoid vegetations, enlarged tonsils, if found in a patient suffering from habitual nose-bleed, must be removed.

There are still some cases in which the bleeding occurs spontaneously, without any lesion being discoverable. These occur more especially in growing children, who otherwise are in good health. **Ergot** has been recommended as a preventive in these cases by

Morell Mackenzie. The writer has found in the fluid extract of **Hydrastis Canadensis** a sovereign remedy in these cases. It is administered internally in 10-drop doses, in water, every two or three hours. The hydrastis is prescribed, be it understood, as a preventive for the patient who at the time of his visit is not bleeding from the nose, but who gives a history of repeated bleedings. A 5 per cent. solution of the fluid extract of hydrastis in water may be used as a spray for the nose; it may also be used with liquid vaseline, albolene, or kindred preparations, as a spray or brushed into the nose. Its only drawback is, that it has a tendency to cause constipation, but this may be combated by mild salines.

It has seemed to the writer that the simple rules for the stoppage of capillary hæmorrhage are applicable to these cases; the object is, as in hæmorrhage, to secure coagulation at the point of bleeding and to keep the clot in place.

The first rule, therefore, is to place the patient, and more especially the bleeding part, at rest; nervousness or fright should be quieted with assurances that there is absolutely no danger; the patient should sit upright in a chair, the head thrown slightly backward; all bands about the neck should be loosened, in order that the circulation may be unimpeded; the patient should then open the mouth as widely as possible, and should breathe through the mouth only until bleeding ceases. Blowing the nose, hawking, and spitting must be strictly interdicted. In following the instructions thus far given, the interior of the nose is placed at rest and the first indication is fulfilled; whereas, if the patient snuff up cold water, wipe or blow the nose, he displaces clots and favours the continuance of the hæmorrhage.

The second rule is to tell the patient, his mouth being kept wide open, to breathe more deeply and more rapidly than he normally does, the respirations may be increased to 30 per minute; the immediate effect of this increased oxygen supply is to increase the force and frequency of the heart's action, and presumably to increase the amount of blood in the pulmonic circulation at the expense of the cerebral; whether it be due to the more thorough equalization of the blood-supply to the body and head, or to the increased muscular action incident to the increased respiratory effort, it has seemed to the writer that the nasal mucous membrane is depleted to some extent by this procedure.

As soon as the patient tires of the rapid breathing—which he does very soon, perhaps after thirty respirations—he may breathe normally for a few moments, when, if the bleeding has not ceased, he is told to breathe rapidly again; the mouth is to be kept open constantly, and any blood flowing into the pharynx is to be swallowed.

The final rule is to tell the patient to enunciate the broad vowel "A" with each expiration; the soft palate is thus brought in contact with the posterior wall of the pharynx during each expiration, the posterior nares are separated from the pharynx, and the blood is prevented from flowing into the œsophagus during the expiratory periods.

Should these procedures not prove sufficient, the insufflation of **Tannin** may be tried, and if this fails, the tamponing of the nostril with long, narrow strips of **Iodoform Gauze,** dipped in the **Glycerite of Tannin,** with the ends hanging out of the nostril. It is needless to dwell on the advantages of a method of arresting nasal hæmorrhage in which no drugs or instruments of any kind are necessary.

Cozzolino[2] says that in persons subject to epistaxis, the bleeding always takes place from the right nostril, except in those who are left-handed. The seat of the hæmorrhage is generally the anterior cartilaginous portion of the septum, the starting point often being a minute excoriation caused by the finger nail. Cozzolino applies a solution of 1 gramme of **Trichloracetic Acid** in 30 to 40 grammes of sterilised water directly to the bleeding point by means of a piece of cotton wool fixed on the end of a probe. To prevent smarting a little **Hydrochlorate of Cocaine,** pure or carbolised, or, better still, **Tropacocaine,** may be added to the solution. The reaction caused by the acid is short, the eschar soon separates, and the little wound quickly heals. Cozzolino says perchloride of iron should, for hæmostatic purposes, be altogether replaced by trichloracetic acid in solution (1 in 80 or 100), which, besides stopping bleeding, has distinct antiseptic properties.

Hutchinson[3] places patients with obstinate nose-bleed in the sitting posture and with the feet in a deep pail of water as hot as can be borne. He says this never fails to arrest the hæmorrhage.

Plethoric cases[4] are relieved by :—

℞ Tinct. Aconit. gtt. viij | Liq. Ammon. Acetat. ʒj

M. Sig.—Teaspoonful every half-hour.

REFERENCES.—[1] "Therap. Gaz.," Aug. 15, 1894; [2] "Brit. Med. Journ."; [3] "Med. Record," May 26, 1894; [4] Ibid., Jan., 1894.

Synopsis.—(Vol. 1894, p. 253.) **Citric Acid** or **Lemon Juice** introduced into the nose. Inhalation of 10% **Antipyrin Solution,** or thrown up by a syringe.

EPITHELIOMA. (See also "Cancer.")

Synopsis.—(Vol. 1894, p. 254.) Darier's treatment, which see. **Caustic Potash** used by Robinson for small tumours of forehead, cheek, lips and in early epithelioma of lips. **Chloride of Zinc. Bougard's Paste** : ℞ Wheat Flour, Starch Powder, āā ʒj; Powd. Arsenious Acid, gr. viij; Red Sul-

phide of Mercury, gr. xl; Chloride of Ammonium, gr. xl; Bichloride of Mercury, gr. iv; Crystals of Zinc Chloride, ℥j; Boiling Water, ℥jss. **Marsden's Paste**: Arsenious Acid, Powdered Acacia, equal parts rubbed well together with enough water to make a thick butter-like paste. **Pyrogallic Acid** (℥j to ℥j Vaseline). Lassar advocates **Arsenic** internally. Inglis Parsons uses **Electro-cautery.**

ERYSIPELAS. *T. Colcott Fox, M.B.*

Anders formulates the following conclusions :—

(1,) Proper attention to the diet is of paramount importance; (2,) Stimulants are rarely necessary, if the dietetic requirements are fully satisfied, but may be freely exhibited when indicated; (3,) Of drugs, **Iron** has been widely tested and found to be of great value, though it matters little which salt or preparation is employed; (4,) **Quinine**, when administered with iron, reduces the temperature, supporting at the same time the vital functions; (5,) The use of antiseptics per os is to be recommended; (6,) **Pilocarpine** is in a small proportion of cases powerful to abort the affection. To reduce temperature merely pilocarpine should be employed in intense pyrexia, particularly where the favourable morning remissions do not occur; (7,) The question of the local treatment of erysipelas has not yet been set at rest, but agents intended to exclude the air, and such as possess germicidal power, especially corrosive sublimate, are highly useful; (8,) That the erysipelococcus of Fehleisen, which is found chiefly in the more superficial channels of the corium, may be attacked directly by the **Corrosive Sublimate Solution,** when the latter is used after scarification, is quite probable; (9,) In erysipelas migrans the germicide should be injected beneath the skin, just beyond the edge of the part inflamed.

The conclusions are illustrated by various recent papers. Thus Salinger speaks favourably of pilocarpine given so as to produce the full physiological action of the drug. G. W. Barr, who learnt the method from Da Costa, in 1883, administers it in a dose sufficient to produce a marked physiological action, (usually $\frac{1}{6}$ grain) and repeats it in two hours, again in six hours, and finally in two hours more. The earlier the treatment is begun the better.

Arnozan gives 4-grain quinine pills three or four times daily, according to the temperature, and applies over the affected surface the following ointment :—

℞ Hydrargyri Perchloridi gr. j	Adipis Lanæ Hydrosi	.
	Petrolati	āā ℥ss

Labanowski prefers the application of compresses soaked in a solution of sublimate one hundredth, as warm as can be borne, to pulverisations of similar composition.

Gaston recommends hypodermic injections of a 12 per cent. solution of **Carbolic Acid** made as follows :—

℞ Carbolic Acid	f℥j		
Glycerine	℥iij	Distilled Water	℥iv

M.

One syringeful is injected daily for three days in each area the size of the hand. He has repeatedly injected into four such areas at a time, but care must be exercised not to overdo this. Internally he administers at the outset **Calomel** followed by **Epsom Salts** in **Senna Tea**, and afterwards tincture of **Perchloride of Iron** every three hours till one ounce is taken. In some cases he adds 10-grain doses of **Chlorate of Potassium.**

Felsenthal gives Gluck's method as follows : The erysipelatous area is carefully washed, and a large number of both superficial and deep incisions are made with a knife. Then the scarified surface is washed with an antiseptic, and the serous exudation pressed out with the sterilized hand. The part is then dried, rubbed with 60 per cent. **Ichthyol Ointment**, and finally covered with the same ointment, cotton wool, and a gauze bandage. The dressing, is renewed night and morning.

Lastly, we may notice some observations by Guimard and Geley, on the antithermic action of certain alkaloids (cocaine, sparteine, solanine, helleborine) applied to the skin. In some cases where the dermis is involved, such as in erysipelas, the action of the alkaloid is said to be remarkable. **Sparteine** thus applied had a very happy effect. Good results were noted also in measles, scarlet fever, erythema nodosum, febrile eczema, and small pox.

REFERENCES.—Auders, "Therap. Gazette," July 16, 1894; Salinger, Ibid., March, 1894; Barr, Ibid., May, 1894; Arnozan, "Arch. de Méd. et de Pharm. Mil." No. 2, 1894; Labanowski, "Archiv. de Méd. Mil." No. 1, 1894; Gaston, "Med. and Surg. Reporter." March 24, 1894; Felsenthal, "Archiv. Kinderheilk," B. xvi., t. iii-vi : Guimard and Geley, "Acad. des Sciences," Aug. 6, 1894.

Synopsis.—(Vol. 1894, p. 256.) **Ichthyol Solution**, **Nitrate of Aconitin Solution** ($\frac{1}{100}$ gr. in 50 ♏) 50 ♏ in twenty-four hours given in divided doses. **Liquid Thiol**, 40% watery solution, painted on five times a day. **Calomel**, 10 grs. internally, followed by **Quinine**, 10 grs., night and morning, with 8 to 15 grs. **Camphor** in emulsion given in twenty-four hours. **White Vaseline** painted on. **Gentle Rubbing** for a minute twice daily with 1 and 2% ointments of **Paro-chloro-phenol** and **Orotho-bromo-phenol**. Application of **Essence of Turpentine**, or painting with **Guaiacol** twice daily if temperature is high. **Cold Baths.** Painting **linimentum Iodi** round and beyond the affected area.

ERYTHROMELALGIA.

Synopsis.—(Vol. 1894, p. 259.) Arsenic, Antifebrin. The most useful drugs are Antipyrin and Morphia. Faradisation has been successfully used.

EXOPHTHALMIC GOITRE.

Synopsis.—(Vol. 1894, p. 260.) Intestinal antiseptics, together with Strophanthus Tincture. Rest treatment.

EYESIGHT AND SCHOOL-LIFE. *Simeon Snell, F.R.C.S., Ed.*

There is, it appears to me, abundant and convincing evidence that the vision of children, which should apparently under normal conditions have remained good, is constantly deteriorating during the school period. The much larger number of children who are put into spectacles to-day than was formerly the case is no doubt an evidence of our expanded knowledge, but shows also a real increase in those requiring optical aid. The fact is, the eye is unequal to the task too often expected of it. It is an ascertained fact that nearly all children at birth are hypermetropic, and in the course of growth and development evolution would bring these same eyes to be emmetropic, or in other words to have the normal refraction. The time was, when vision for distance was almost the only sight required, that for near objects being only occasional. The savage is found in this state at the present time, and his keen vision for objects at, to us, almost surprising distances, is well known. Civilisation bringing in its train the printing press, with its huge out-pour of literature, has changed the face of things. The hours that even little children spend over work close to their eyes, such as fine sewing, is perhaps almost bringing us to the opposite extreme—that the use of vision for near objects is becoming constant, and that for distant, occasional.

The two means by which the eye accomplishes this close work are nearly allied, and both are muscular. When focussing is undertaken for a near object, convergence also goes with it. It is of importance to bear in mind that this act of accommodating is a muscular one, and with undue work, tiring will ensue just in the same way as weariness and disability will result from an over-exerted biceps. For our purpose at present it will be better to confine attention to the two broad divisions into which refraction errors are placed. Astigmatism, whether simple, compound, or mixed, falls towards one of these groups, and it is essential that its possible existence should be borne in mind, however low the degree when testing and prescribing glasses, for scholars. The normal or ideal eye is curiously of less frequent occurrence than is popularly

Group of Children with light falling from the left in the best position for work.

supposed. The refraction in new-born babes, as shown by the observations of Ely, Horstmann, and others, is generally hypermetropic. As a result of growth and development, this condition alters and passes gradually into the emmetropic or normal state of refraction. This is certainly true of the lower degrees, but is less so perhaps of the high ones. Less frequently the early hypermetropic eye passes into myopia. Many eyes moderately used even with a fair amount of hypermetropia will get along with little or no discomfort. They will merely require glasses earlier than would otherwise have been the case. But given an amount of close work, reading, writing, or sewing, and especially if the nervous system is otherwise overdone, and the train of distressful symptoms is set going. A cause of the headache so often complained of by children is to be sought frequently in the conditions just mentioned.

Another point to be noted here bears upon this question of strain. The ciliary muscle, after producing the alteration of focus necessary for close work, should, after the occasion for its use has ceased, relax, and pass into a state of rest. Not so always, however, with these hypermetropic eyes, for by no means uncommonly a kind of spasm or cramp results, and a fictitious near-sightedness is induced, and there is little doubt that many eyes neglected at this stage become almost imperceptibly myopic in reality. Attention must be given to the refraction, and it is desirable, in all cases to estimate this under the influence of a mydriatic; not only will our testing by this means be done more correctly, but the rest induced thereby in the ciliary muscle will be distinctly beneficial. It is beyond the scope of this article to enter upon the question of the ordering of spectacles, and all that is necessary is to allude to the importance that astigmatism even of low degrees, of anisometropia, and of muscle conditions, bear to the relief of eye symptoms and headache.

It is, however, to myopia that most of our remarks will be directed, that being the more serious condition as far as vision is concerned. Hypermetropia has been spoken of as congenital. Myopia is seldom so. It is sometimes present in very early life, but it usually makes its appearance about the eighth year. For our purpose it may be regarded as acquired, and the numbers of myopes are being constantly recruited by eyes which have passed over into this group from the hypermetropes. Several cases have been noted whilst under observation.

Myopia is seldom found in new-born infants. As has been stated, the exact opposite is the case. There can be in my opinion no doubt

that during school-life eyes which previously gave no indication of its presence have become near-sighted. Further than this, it is beyond question that during the scholastic period too frequently the degree of myopia becomes aggravated. The long continuance of close work with imperfect light, a stooping posture, and it may be with brain and body fatigued, are among the causes that lead to this end. It must further be remembered that the extra-focussing of the eyes and the continued convergence necessary for this close work not only aid in bringing about myopia, or increasing it when present, but that the progress of the short-sightedness demands itself still further convergence, and therefore the condition once present, reacts upon itself.

It is very necessary to combat the too popular impression that to have myopia is rather a blessing than otherwise. This belief is perhaps greatly due to the fact that those possessing very weak and stationary degrees of myopia are often afforded a longer period without the requirement of glasses for reading than their emmetropic fellows. There is a good deal to be said for regarding the myopic as a pathological eye. Donders held this view, and Dr. Risley, of Philadelphia, is especially strong in regarding these eyes in this way. Mr. Priestley Smith expresses himself in these words: "Myopia is always a defect, often a disease. It is entirely incurable, but largely preventable. Its progress can be, and often is, accelerated by improper use of the eyes, and retarded by judicious interference." It must be borne in mind that progressive myopia is very often associated with organic disease. The choroid is specially prone to be affected, and the region of the yellow spot often suffers. As the axis of the eye extends backwards the choroid becomes atrophied and shows itself as a "crescent" at the side of the disc. Among other conditions may be mentioned disturbances of the vitreous and detached retina.

There are various causes, in addition to what will be said about the conditions of school life, which appear to predispose to the development of myopia. Heredity is one of these; the formation of the orbits; a difference between the eye centres and a condition inherent no doubt in the structure of the eye itself, which more readily allows of a yielding of the tunics and the prolongation of the axis backwards, must also be mentioned. It has been established that children entering school with healthy eyes have become short-sighted, and that the proportionate number of the scholars affected increases as we ascend in the classes and also in the grade of school. Cohn, of Breslau, who was not only one of the first but has been one of the chief workers on this subject says: "The frequency

PLATE III.

Group of Children writing with light falling from the right, throwing into shade the spot that should be illuminated.

of myopia is shown by the following statistics. I noted in five village schools, 1·4 per cent. myopia; in twenty elementary schools, 6·7 per cent.; in two higher schools for girls, 7·7 per cent; in two middle schools, 10·3 per cent.; in two real schools, 19·7 per cent.; in two gymnasia, 26·2 per cent.; that is, out of 10,060 children, 1004 were myopic, or 9·9 per cent." From this he points out that in village schools the percentage of myopia is very low, while in the town schools the number of short-sighted scholars constantly increases with the grade of the school, from the lowest to the highest. Moreover in every school the number of short-sighted children goes up from class to class. The evidence set forth by statistics demonstrates that near-sightedness is induced during the whole period of school-life, and that from the observations made in all parts of the world, it is correct to say, as Cohn does, that in the whole civilised world the number of short-sighted scholars increases with the requirements of the school and the rank of the class. Our space compels omission of any further reference to the excellent work which has been done in many countries by many observers.

We can now pass to consider the influences which act injuriously on the eye-sight of school children, and to discuss the means by which these conditions should be combated.

Lighting of Schools.—Good lighting is of prime importance. An evil which it is necessary to avoid is the too close approximation of the scholar to his book, and an indifferent or bad light necessitates a nearer approach to the writing or reading. But while there should be good light, and plenty of light, it is of equal importance that it should be *light properly directed.* To have a room well lighted, as far as quantity goes, will be of no avail if the scholar is placed so that he reaps no proper advantage from it, but is on the contrary so situated that the book on which he may be occupied is thrown into the shade and a shadow cast on the part he is reading. Lighting from the roof would be perhaps an ideal method, but as this would necessitate one storey buildings it would be well-nigh impossible in towns.

The surroundings of a school often interfere with its proper lighting, in spite of the best constructed and the most correctly placed windows. Cohn showed that the narrower the street in which the schoolroom was situated, the higher the opposite houses, and the lower the storey in which the lessons were given, the more numerous were the cases of myopia among the elementary classes. A French law requires the top of the window to be at

a distance from the floor equal to two thirds of the breadth of the room, and a French commission also recommended that from each desk in the schoolroom there should be visible a strip of sky at least thirty centimètres, measured from the top of the window. Light from the left is to be preferred, and the best position for a child or any adult is so that the light falls from the left above and somewhat behind (*Plate II*). That from the right is objected to, as from the position of the right arm on the desk the point to which the gaze is directed is thrown into shade, and this is the place where a good light is requisite *(Plate III)*. Light from behind is insufficient, unless there is good side-lighting. From the front it will be dazzling to those in the front row and insufficient to those further back. The question of lighting from right or left is often only a matter of arranging the seats for the children, and a teacher who is alive to the importance of these matters will soon set such a thing right. At the same time lighting from the right is preferable to insufficient light. As little space as possible should be occupied by divisions in the window, and, of course, the old manner of making the windows of small panes or ecclesiastical glass is to be condemned. The arrangement of the glass after the manner that a photographer has his windows constructed has been suggested as suitable for schools. Rooms devoted to study should be flooded with light in such a manner that the darkest place occupied by any scholar may have sufficient light even on a dull day. It has been proposed to estimate the amount of light by photo-meters. There are, however, more practical and easily applied methods. It has been suggested (Strasburg Medical Report) that small diamond type should be able to be read at twelve inches, even by the scholars furthest away from the windows. Again, in some schools on the Continent scholars have ceased to work when darkness was sufficient to prevent the reading of Snellen's twenty type at twenty feet.

All study that can be done by children in daylight should be accomplished then, and not put off until day has gone. No artificial lighting can make up for daylight. When required, artificial light should be ample and steady, and come from a suitable direction. An unsteady light is dazzling and fatiguing. Nor should the illuminant be placed too near the eye, because the heat emitted is injurious and occasions discomfort. The electric light is likely to give us the best method of illumination for schools. It has been employed on the Continent, and is now made use of in some schools in England. Fuchs tells us that in Liege the rooms used

PLATE IV.

for drawing were lighted by it—these were evening classes—and the light was by an arrangement of concave mirrors thrown up to the ceiling, and thus diffused equally through the room, the source of light being hidden. The light fell in equal degrees upon all the desks, was sufficient, and not dazzling.

Desks and Seating of Scholars.—The question of the posture and proper seating of the children in school is a very important one. A much more enlightened view is now entertained on this subject than was not long ago the case, and its importance is becoming recognized. As evidence of this may be mentioned that whereas at the Paris Exhibition in 1867 there were only three school-desks shown, at the last Exhibition no less than seventy-one were exhibited. A bad posture is not only injurious to eye-sight, as will presently be demonstrated, but it is a fruitful source of crooked spine. Eulenberg says that 90 per cent. of curvatures of spine, not induced by local disease, are developed during school-life, and in a school at Neuchatel among three hundred and eighty-one girls, one hundred and fifty-six were found to have more or less deviation of the spinal column. The manner in which the spine becomes distorted is illustrated in the photograph *(Plate IV)*, which I had taken of two boys who sat purposely in a bad position writing at a table too high for them. To make the point desired to be illustrated more distinct the line of the spine was inked. The two other illustrations *(Plate V, Figs. A, B)* were taken at the same time to show the bad position assumed by a child when sitting improperly at a desk or table. In the instance illustrated the boy was seated on a backless bench, at a table which was too high.

The backless bench has long since been condemned for children of all ages and conditions. The point, however, is hardly yet grasped, that desks of different sizes are requisite according to the size of the children. It has well been observed (Snellen), "that it is absolutely impossible that a tall and short boy will both sit equally well on the same seat and at the same desk. It is just as unlikely as that the same clothes would fit the same pupils. Yet in many schools we find desks and seats the same size for all."

As a general rule, children in a school have the same desks quite irrespective of their size. It has been pointed out that the objects we have in view are to prevent undue approximation of the scholar to his lesson-book, and to avoid stooping. To attain these ends certain principles must be followed in the construction of desks. A back rest is important, because without it a child will not for long sit upright. It need not reach above the loins or lower part of the back;

if it reaches to the upper part it will interfere with the free movements of the body. Also, unless a child is able to rest his feet on a foot-board, or on the floor, but has to let his legs dangle, fatigue will result. The height of the seat, the height of the desk, and its slope, are all matters which should be observed, and indeed are attended to in modern school-desks. The slope for writing should be 20°, and for reading 40°. The best constructed desk with which I am acquainted is one devised by Mr. Priestley Smith and made by the Midland Educational Company (*Plate VI, Figs. C, D*). It is constructed upon the principles advocated by Cohn, and is made of different sizes to suit the varying stature of scholars. It would, in my opinion, be improved by being made somewhat lighter. I have ordered many of these desks for patients, and with satisfaction.

This matter of seating of children is one of the most important, if we are to prevent short sight or crooked backs. A medical report at Strasburg, in an investigation into the influences of school-life, speaks strongly, as follows: "We look upon the doing away of the old school-desks as the most urgent necessity of school hygiene. Every half year's delay causes fresh mischief."

Reading and Writing.—These are two subjects that demand careful attention. School-books are much better printed now than was formerly the case. Some of those in use are excellent, both as to size and style of type. The worst are the arithmetic or mathematical ones, when in reality, from the figures which crowd the pages, they should be the most clearly printed of any.

It is important that little children should have books with large well printed letters, which will be readily made out. Much of our reading is in reality guess-work, and rapidity in forming our ideas has come to us by practice. Javal, some years ago in some interesting observations on the physiology of reading, pointed out that the eye in reading had no time to examine each letter in all its parts. The point of fixation in reality runs along a strictly horizontal line, cutting the letters below their tops. The other parts of the letters are seen by a part of the retina at greater or less distance from the centre. He explains this by saying that the eye runs horizontally to avoid unnecessary and tedious movements, and the line is determined by the form of the printed letters. If we cover the upper half of a line it will require considerably more effort to decipher it than if the lower half is covered. In the latter case it can be read just as easily as if the whole of the letters were seen. Javal proceeded to show from this that most of the letters projected above the line, but that as some

PLATE V.

presented similarities there was room for alterations in them which would facilitate reading. Printing which is ill-defined has to be brought nearer the eye, and hence for the reasons before given it must be objectionable. All books should be printed in clear and well-defined type. Cohn lays it down that type, taking (n) as the character, which is shorter than 1·5m., is injurious. The Pica which forms the standard of English type is larger than this.

Reference is often made to school books, but as far as I remember little is said about the printing of music, and yet it is about their music that many little patients come to grief. There is room for improvement in the printing, especially of cheap music.

Writing.—The methods employed in writing require careful notice. The old grey slate is in less request than it formerly was, and its place has a good deal been taken by pens and paper. The slate may well be spoken against, for the contrast between it and the pencil markings were at the best but slight, and when it became greasy they were rendered less so. The contrast of black letters on a white surface is much greater. It has been proved that letters written on a slate to be equally legible must be placed nearer to the eye than characters of the same size with pen and ink on ordinary white paper, the difference being as much as three to four. The late Professor Horner, of Zurich, was of opinion that the welfare of the eye demanded the expulsion of slates from schools. The use of ink and paper was advised and practically tested, and as the result the School Board adopted a resolution that pen and ink should be used as writing material, but that the teacher should be permitted the use of slates for beginners in the first winter term. Cohn adopted these conclusions, and to obviate the evils complained of in the old slate he had white composition slates made. They had a non-shining surface; pencil markings were easily erased. I had a supply of these slates soon after they were first made, but as far as my knowledge goes they never came at all into use in this country; for one thing the cost was held to be prohibitive. In many schools there is a tendency to give too much writing. All is eye-work, and notes from lectures are taken down by girls until the number of note and exercise books which they have in use is frequently very large.

A good deal has during the last few years been written as to the position pupils should occupy when writing, and whether the writing should be vertical or slanting. The latter held sway for long, but there is evidence that to some extent it is being superseded by upright penmanship, and will in the future be more so. For my part, I am

satisfied that for the objects one has in view for obviating sight-failure the upright is to be preferred to the slanting method. From an oculist's point of view there are distinct advantages in the vertical method of writing. The eyes are directed straight to the copy, whilst in the sloping method there is a great tendency for a pupil to assume a slanting look with his eyes; stooping also will be less liable to occur, and it will be easier for the scholar to keep at a proper distance from the book. The photographs reproduced here (*Plates VII & VIII*), were taken in a school where vertical writing was taught. The one (*Plate VII*) illustrates the scholars viewed from the front; and the other (*Plate VIII*) shows the good position maintained by the scholars from a back view.

Hours of Study.—The prejudicial influences, already mentioned, will act with greater force if associated with bodily fatigue and over-work, especially brain work. The more weary the scholar becomes the closer to the eye will go the book. The intervals of rest in the hours of study, even if short, should be frequent. There is also much to be said for the older plan of morning and afternoon school, rather than a long period all at a stretch. The former allowed time between school hours for recreation, and, what is of the utmost consequence to children, a good substantial midday meal.

It is certainly desirable that the child's attitude at home should be as correct as at school, and especially that the regulations as to light should be carried out, and more so because, for the greater part of the year, artificial illumination will be required. In many cases attention to these matters at home will be impossible, and this is a reason for the preparation classes being held at the school. Home work should be avoided as much as possible.

Fancy needle-work and fine embroidery are in many instances to be discountenanced. It is necessary and useful for every girl to be taught the use of her needle, but the amount of fine needlework which was, and it is presumed, is still required at schools, is to be deprecated. Samples of the various kinds of needle-work required of the different standards in elementary schools were some time since brought to me by a teacher, and they appeared to me to unnecessarily and injuriously tax the visual capacities.

The Duties of Parents and Teachers.—Parents.—The home life of pupils plays without doubt a by no means unimportant part in the causation of the ills of the school period. Especially is this the case with elementary school children, many of whom must almost of necessity be badly fed and housed. But besides this, my experience is that parents are too apt to shirk their own responsibilities and

Fig. C.

Fig. D.

throw them on the teachers. To the doctor they may murmur at the over-pressure and over-work at school, but here it seems their duty ends. It is incumbent on every parent sending a child to school with defective eyesight to mention the fact to the teacher. It is desirable, moreover, to see that their children when engaged on home lessons, or in other reading, or writing, assume a proper position in a good light; that they also bear in mind what has previously been written in this article, and that also which follows.

Teachers.—Teachers have it in their power to render very material assistance in preventing deterioration of vision in their scholars.

The points mentioned in this article as to the lighting of schools, the school desks, and the posture of the children, when engaged in writing and reading, should be borne in mind by them. When a child with defective sight is sent to school the teacher should be made acquainted with it by the parents, and especial pains should be taken with that child. It should not, however, be difficult for a teacher to recognize a real defect, and not mistake for stupidity or idleness what is the result of genuine inability. Still, teachers are frequently doing this, and many unhappy children have punishments inflicted on them simply and solely for mistakes arising for want of visual power. It is not easy to excuse such conduct as this, and parents are more than justified in feeling and speaking strongly on it. A child who is known to be short-sighted should be placed towards the front, where the task of seeing what is written on the black-board will be easier. A teacher also who has observed a pupil's sight to be defective should communicate the fact to the parent of the scholar so that proper advice may be taken. Especial attention should be paid to such children at their lessons. They should sit upright: avoid stooping; avoid close work (less than twelve inches is hurtful); work should be done in a good light from a proper direction; writing should be curtailed; frequent pauses between the lessons enforced; and home work abolished or regulated. Teaching through the ears to save the eyes, should be employed when practicable in aggravated cases.

Types to aid a teacher in detecting short sight have been prepared, and the Anthropometric Committee of the British Association has proposed a series of suggestions for use in schools. They deal with hearing, bodily condition, such as height, weight, etc., but what interests us here is that directions are given as to sight. These were drawn up for the committee by Mr. Priestley Smith, and if acted upon by teachers, without doubt much good would result.

Dr. S. D. Risley, of Philadelphia, claims in a recent article that the thorough manner in which the ophthalmic surgeons of that city have

for many years corrected refraction errors has led to very definite results. Altogether he deals with no less than 200,000 eyes, and a consideration of the evidence substantially demonstrated the essential responsibility of anomalies of refraction in the etiology of short sight and also the value of treatment and correction of these eyes in arresting the increase of myopia. He concludes that the progress of the increasing refraction, both in percentage of cases and in the degree, was arrested by the treatment and glasses received. There was a steady decrease, taking the figures which are given in full detail, of the first years in the percentage of short sight falling from 28·43 per cent. in the first period, to 16·78 in the last. Of greater importance almost is the fact of the diminution of the grade of myopia, there being a fall of nearly 50 per cent. of the patients with 10 D, or greater, and a closely corresponding decrease in the cases with M of 3 D to 10 D. The significance of such figures cannot be too strongly urged as setting forth the value of modern ophthalmological methods to the community in the prevention of myopia.

Ophthalmic Therapeutics. [*Editorial.*

De Schweinitz[1] in a paper on ophthalmic therapeutics, points out that the value of intra-ocular injections is still *sub judice*. He alludes to Landolt's conclusions regarding the uselessness of prolonged mercurial courses in old atrophy of the optic nerve, also in certain chronic affections, *e.g.*, pigmentary degeneration of the retina, atrophic choroido-retinitis and disseminated choroiditis, and the doubtful utility of this drug in non-syphilitic chronic exudative inflammations of the uveal tract, *e.g.*, irido-cyclitis and irido-choroiditis, which last conditions demand the elimination of their exciting cause—rheumatism, gout, depressed nutrition from wasting disorders, abnormal menstruation, or chronic uterine diseases—and appropriate treatment of the constitutional condition.

It should be particularly remarked that all this refers to vigorous use of **Mercury**, pushing the drug to the point of tolerance, or even beyond. No one doubts the efficacy of the drug in proper dose, especially the bichloride and biniodide, as an enricher of the hæmoglobin percentage of the blood, as a tonic pure and simple, as an antiplastic, and as possessing the subtle influence which we call alterative. Within these limitations mercury must always remain a potent agent in our hands, especially in the early stages of these troubles—for example, when an optic nerve is on the stage of cloudy swelling, slight œdema, or passive hyperæmia.

Under the head of treatment of optic nerve atrophy, Schweinitz discusses the suspension treatment of Charcot, and concludes that

Photograph of Children in School engaged in upright writing (Front view).

although the improvement thus far obtained is meagre in quantity and the outlook extremely dubious, the subject is of sufficient importance to invite a more accurate study than has thus far been accorded to it.

The use of organic extracts in the treatment of the ocular troubles of ataxia is condemned, and Valude's application of antipyrin subcutaneously administered for optic nerve atrophy is also objectionable.

The condition typical of the asthenopic eye—the hyperæmic nerve-head, imperfectly differentiated from the unduly flannel-red surrounding choroid, itself woolly in appearance and exhibiting faint dark areas in its periphery, indicating inter-spaces between its larger vessels, together with a streaked and slightly opaque retina, is familiar to all practical ophthalmologists, and the **Iodide** and **Bromide of Sodium** and **Potassium, Iodide of Iron,** the alteratives generally and various preparations of **Ergot,** naturally suggest themselves, and probably **Cannabis Indica** has a distinct sedative influence upon the retina under these circumstances.

Certain disadvantages connected with the use of cocaine are well-known and always avoided by careful operators, especially its power to wrinkle the corneal epithelium and to render this membrane more susceptible to the disturbing action of vigorous germicides, particularly bichloride of mercury. Recently, Mellinger, called attention to another hurtful action of cocaine—namely, that it hinders, after section of the cornea, the development of a primary lamellar wound closure, and prevents the formation of a "coagulation support" in the parenchymatous portion of the corneal incision. These researches probably explain some cases of delayed union after cataract section, and indicate the necessity of using cocaine in quantity only sufficient to anæsthetize the cornea.

In the medicinal treatment of optic nerve atrophy—**Strychnine, Phosphorus** and its compounds, **Nitrate of Silver, Antipyrin,** and the alteratives—the probable value of **Nitro-glycerin** should not be forgotten. We are all familiar with the temporary beneficial effect of **Nitrite of Amyl** upon the visual acuity of certain types of toxic amblyopia, and hence **Glonoin,** in graver forms of atrophy, when they have not progressed too far, may assist in bringing nourishment to the fibres by its vaso-motor influence.

The great majority of careful observers are inclined to agree with the assertion of Noyes, that electricity "has failed to vindicate its pretensions to any real value, although by its capacity for exciting phosphenes, it fosters the hopes of a credulous incurable."

Dr. Riggs believes that the physiological action of the remedy

is more energetic with reversal of the polarity of the electrodes than with simple closures.

The use of the **Continuous Current** has received some commendation for the renewal of opacities of the vitreous, and Pansier has recently contributed a number of observations on the use of the continuous current in the treatment of irido-choroiditis, and reports the disappearance of adhesions and a calming and sedative effect under its influence. The negative pole is applied to the lids and the positive in the region of the superior cervical ganglion, with a current of five milliampères' strength. There is enough evidence to make it worthy of further trial, and it is desirable that those who have had an abundant experience should record their results.

Formulæ for an Eye-Wash.[2]—All former eye-washes made up of nitrate of silver, atropine, eserine, or sulphate of zinc, have of late been substituted by antiseptics, chief among which is **Corrosive Sublimate,** according to this formula :

℞ Bichloride of Mercury	gr. ½	Sydenham's Laudanum	ʒss
Distilled Rose-water	ʒv		

For an eye-salve :—

℞ Red Oxide of Mercury	grs. 15	Powdered Camphor	grs. 7½
Crystallized Acetate of Lead	grs. 15	Vaseline	grs. 288

References.—[1] "Therap. Gaz.," Aug., 1894 ; [2] Ibid., Oct., 1894.

FEVER (Enteric).

The Urine.—Dr. Guve points out that mistakes in applying Ehrlich's test may arise on account of the different terms applied to the same shade of colour by different observers. He has used the test as follows : "*A*, containing the saturated solution of sulphanilic acid, and *B*, the ½ per cent. solution of sodium nitrite. These are mixed in the proportion of 100 ccm. of *A* to 2·5 ccm. of *B*. A small quantity of the mixture is added to an equal quantity of urine, which is then made alkaline with strong solution of ammonia. In normal urine a yellow or orange colour is produced, and in morbid urines all shades from this up to a deep-red (port-wine) colour are obtained. At first it was very difficult to separate out the reds ; then it was suggested that the *foam* might be a very useful guide, and since that time he has found that, in a true Ehrlich's reaction, if the resulting liquid be shaken up a foam may be formed, which in the normal urine is white, but in the true reaction is of a *delicate salmon colour.* This is very easy to distinguish, and has always determined his opinion one way or the other as to the re-

Back view of Children in School engaged in upright writing.

action in a given case. This point he is convinced is of great value in the estimation of the character of the reaction."

Diagnosis.—Dr. Simon Baruch[2] says: "As soon as a patient shows a rectal temperature above 102·5° in the morning and 103° in the evening for three successive days, especially if this be accompanied by headache, dulness, or apathy, he is placed in a full bath at 90°, which is reduced to 80°, with constant friction over the body. In three hours, the temperature still being above 102·5°, he receives another bath five degrees cooler. This is repeated until the temperature of the bath is 75°. If one or more of these baths fail to reduce the rectal temperature two degrees in half-an-hour, the diagnosis of typhoid fever is almost certain, and the bath treatment is continued. The resistance of the rectal temperature to a bath of 75° for fifteen minutes with friction is an almost certain test of typhoid fever."

Dr. Baruch considers that the diagnosis of this disease should no longer be obscure, even in the first days of its course.

Dr. Filipovich,[3] of Odessa, calls attention to a hitherto unmentioned sign which he has observed in all the cases of typhoid fever under his care during the last two severe epidemics of typhoid in Odessa. It consists in a peculiar callous appearance, of an orange or saffron yellow colour, upon all the prominent portions of the palms of the hands and plantar surface of the feet, taking the place of the rosy appearance of those parts in health or the bluish tinge seen in cyanotic patients. This condition is explained by the feeble heart-action, the incomplete filling of the capillaries and the dryness of the skin in typhoid patients. In view of its constant and well-marked appearance in all the cases of typhoid under observation, Filipovich thinks it may well serve as a diagnostic sign of typhoid fever, in the absence of other pathognomonic signs. Dr. Skibnevsky has also observed the constant appearance of this palmar-plantar sign during an epidemic in Moscow. The sign disappears rapidly on the establishment of convalescence.

TREATMENT.—Eliot[4] insists on the necessity of *absolute rest* in bed, quiet, and liquid food until the temperature has remained below 99° F., during the whole twenty-four hours for a week at least. He commends **Carbolic Acid** and **Iodine** as the best antiseptics as well as gastric sedatives, relieving nausea and vomiting. These are administered in the following mixture:—

℞ Ac. Carbol. ʒj | Tinc. Iodi ʒiij
M. Ft. Mist. Sig.—4 drops in a wineglassful of water every four hours.

Vilietsch[5] claims considerable success from the use of **Iodine** as follows :—

℞ Potassium Iodide	gr. 90–120	Aq. Menth. Pip.	āā ℥iiss
Aq. Dest.		Solut. Iodi	gr. 8–12

Sig.—8 to 10 drops. Secundus horis.

Samson[6] inclines to view solitary cases of typhoid with great mistrust. In quite young subjects meningitis should be suspected, or history of some one of the exanthemata. In the case of old patients he quotes the advice to never call in the assistance of the consultant until the condition of the kidneys has been ascertained.

After discussing the aspect presented by a large number of cases in which relapses occurred Stewart[7] concludes that:—

(1,) So-called relapses of typhoid fever are genuine second attacks, repeating all the phenomena of the first and due to re-infection of the large intestine from the small.

(2,) This re-infection generally takes place at a definite period in the original attack, and is probably effected by the passage of sloughs over healthy lymphoid follicles.

(3.) Constipation is an important pre-disposing cause of relapse.

(4.) The prognosis of relapse is good, and of this fact a reasonable explanation can be offered.

Surgeon-lieutenant-colonel Quill[8] recommends:—

℞ Ac. Carbol. Pur. (Calvert)	℥36		
Sp. Chloroformi	℥ij	Syr. Hemedesmi	℥ij
Tinc. Cardamomi. Co.	℥iij	Aq. Chloroformi	ad ℥xij

M. Ft. Mist. Sig.—℥j every two hours with an equal quantity of ice-water.

The author says it is important to continue the use of the mixture in from 3 to 5 doses daily for at least a week after the temperature has fallen to the normal point; this renders the patient less liable to a relapse. Surgeon Quill states that during the past year he has treated with this mixture all the cases of typhoid fever that have come under his care, and in every case perfect recovery has followed without the occurrence of any symptom calculated to cause anxiety; but he does not state how many he has had. He has observed the following effects of the use of **Carbolic Acid** and **Chloroform**: (1,) A reduction of the average duration of the fever; (2,) A continuous depression of the febrile temperature; (3,) Early cleansing of the tongue, which was rarely observed to be dry, and then only for the time being; (4.) An almost complete deodorization of the stools; (5,) Entire absence of abdominal distention; (6,) Checking of the tendency to diarrhœa; (7,) Preservation of the patient's intellectual clearness,

with no tendency to stupor or delirium ; (8.) The non-occurrence of any secondary complication ; (9,) Rarity of relapses and their brief duration when they occurred : (10,) The invariably satisfactory assimilation of food ; (11,) Rapidity of convalescence.

REFERENCES.—[1] "Practitioner," March, 1894; [2] "New York Med. Journ.," Sept. 2, 1893 ; [3] "Boston Med. and Surg. Journ.," p. 429, Oct. 26, 1893 ; [4] "Med. Record," Nov. 18, 1893 ; [5] "Münch. Med. Wochenschrift" ; [6] "Med. Age," Dec. 11, 1893 ; [7] "Practitioner," March, 1894; [8] "Brit. Med. Journ.," April 28, 1894.

FEVER (Puerperal). *Wm. J. Smyly, M.D., F.R.C.P., I.*

The Prevention of Puerperal Fever.—The brilliant results obtained by antiseptic midwifery in maternity hospitals have not been attained in private practice, and this is the more to be deplored since the great majority of women are confined in their own homes. Dr. Boxall has stated that the returns of the Registrar General show a slight improvement in London, and rather worse results in the provinces. Allowing for the uncertainty of statistics, we must admit that the improvement, if any, has been very slight. Dr. Boxall endeavours to account for this by the fact that the bulk of midwifery practice is still in the hands of persons who have not been instructed in antiseptic details. Unfortunately, in Germany, where the use of antiseptics is enforced by law, a similar lack of improvement has been reported. Something more, therefore, is required than antiseptics, and Hegar is probably right in stating that what has been gained by antiseptics has been lost by meddlesome interference. We come back, therefore, to the old saying : "*Meddlesome midwifery is bad.*"

As meddlesomeness, I would especially warn against frequent vaginal examinations, early rupture of the membranes, unnecessary use of forceps, manual removal of the placenta, and routine douching.

The importance of replacing vaginal as far as possible by abdominal examination was first insisted on by Credé. In 1886 he wrote, "Even the simplest manipulation may cause infection. It should, therefore, be laid down and taught as a fundamental principle that internal examination of parturient women should be altogether avoided, or restricted within the narrowest possible limits. It can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions." This is the tendency of modern midwifery, and is an advance, almost, if not quite, as important as the introduction of antiseptics.

By way of illustration, I shall describe how to conduct an ordinary labour : The attendant having asked the usual questions directs the

patient to lie close to the right-hand side of the bed, upon her back, with her legs extended. Having warmed his hands, he then proceeds to palpate the abdomen systematically; to do which he employes three grips, occasionally four. For the first three he sits beside the patient with his face towards hers; for the fourth he changes his position, turning his back towards her face.

For the first grip he places his hands flat upon the fundus, and observes its relation to the ensiform cartilage and umbilicus. He then feels more deeply the fœtal parts. The breech feels large and soft, with the lower limbs in close proximity to it. The head is recognized by its hardness and a peculiar sensation of *ballottement*, which, if once felt, can never be mistaken.

For the second grip the hands are moved downwards to the middle of the uterus. A sense of greater resistance is felt by the hand under which lies the back of the child; the opposite side is soft, and the limbs can be felt. If still in doubt, one hand is placed in the middle line, and gently pressed backwards towards the spine. The child is thus displaced into the side of the uterus towards which its back is turned.

For the third grip one hand only is required. It is placed upon the hypogastrium, just above the pubes, with the thumb on one side of the uterus, the fingers on the other. By slowly approximating the thumb and fingers, the lower segment is grasped, and the part of the fœtus contained in it distinctly felt. The head feels large and round, the breech smaller, and much softer. By moving the hand from side to side, the mobility of the head is ascertained. When above the brim it *ballottes*, but when it enters the brim it is fixed. By moving the hand upwards, it will be found that the head extends higher on one side, and that on the higher side it approaches nearer to the surface; this is the forehead, from which a deep groove runs downwards to the occiput.

When the head has descended into the pelvis, the fourth grip becomes necessary. The examiner sits with his back to the patient's face, and, placing his hands upon the sides of the uterus, slides them downwards until the finger tips are just above Poupart's ligaments. When the back is to the left, the round ligament on that side is usually felt as a hard cord, but the right ligament is not so distinctly made out in the second position. The finger tips of both hands are alternately pressed down into the pelvic brim until the skull is felt. The sides on which it approaches nearest the surface is the face. Lastly, the fœtal heart is auscultated, and its position and rapidity noted.

From this method of examination, the following information is obtained :—

Firstly, the presence of pregnancy : Dulness on percussion, palpation of fœtal parts, and the fœtal heart sounds, exclude pseudocyesis.

Secondly, the period of pregnancy is determined by the position of the fundus, the prominence of the abdomen, the condition of the umbilicus, and the size of the fœtal head.

Thirdly, the presentation and position of the fœtus. In vertex presentations the hard round head is felt in the lower uterine segment, the breech and legs in the fundus. In the first position the forehead and limbs are to the right, the occiput, back, and fœtal heart to the left. If the face be towards the pubes, and above the brim, the forehead forms a prominent tumour, resembling in appearance a distended bladder, but is easily diagnosed from this by its hardness. Above this tumour the abdomen is not prominent, but forms a deep sulcus. In face presentation the limbs and fœtal heart are found on the same side as the greatest resistance. Below, the occiput forms a large round tumour on the opposite side to the limbs, but no part of the head can be felt on the same side. In breech cases the head is found in the fundus, and the fœtal heart at the level of the umbilicus. In oblique and transverse presentations the head is found to one side, the breech on the other. Twins are indicated by two heads, the number of limbs, especially if found on both sides of the uterus, and a second fœtal heart.

Fourthly, pelvic deformity is suggested by pendulous abdomen, abnormal mobility and obliquity of the uterus, especially in primiparæ, and, in the latter, excepting hydramnios, hydrocephalus, and plural births, it is an ominous sign, when labour has commenced, to find the head above the brim. The manner in which the head enters the brim is also suggestive. In flat pelves the forehead and occiput are on the same level ; in generally contracted pelves the head is abnormally flexed.

Fifthly, we can tell whether the woman is in labour by the contraction of the uterus during a pain. The contractions preceding labour are painless. False pains are not accompanied by contraction.

Sixthly, the course and progress of labour can be accurately followed by observing the fixation of a previously mobile head, and following its descent into the pelvis. For this purpose the distance of the highest point of the forehead from the pubes is measured in fingers' breadths, and after it has passed the brim it can be followed down into the cavity by the finger tips.

Danger to the mother is indicated by thickening of the upper and thinning of the lower uterine segments, the gradual elevation of the

contraction ring, and the prominence of the round ligaments. Danger to the child by slowing of the fœtal heart, violent movements, and escape of meconium.

External examination should be chiefly relied upon, not only because it is safer for the patient, but also because it gives more information to the examiner, and is easier and more reliable. Having for many years practised the vaginal method exclusively, I found it difficult to persuade myself of the truth of the two latter assertions; but not only has individual experience proved to me that this is so, but in the Rotunda Hospital, where the students are obliged to write down upon the bed cards the result of each examination, I find that mistakes are much more frequent with the vaginal method.

A patient who has never been examined is almost absolutely safe from puerperal infection, and, therefore, before each examination one should be fully persuaded of its necessity. For my own part, I seldom examine more than once, when, for example, the presentation cannot be made out by careful and repeated palpation, and to obtain information which cannot be otherwise attained, as, for example, prolapse of the cord. The best time to examine is as soon as possible after the rupture of the membranes.

Before making a vaginal examination, the hands of the examiner are carefully asepticised by washing them with soap and water, scrubbing them at the same time with a strong nail-brush. The soap is then removed with clean water, and they are immersed for one minute in corrosive sublimate solution, 1 in 1,000. The external genitals of the patient are similarly cleansed, the nail-brush being, of course, omitted. Prophylactic douching, unless specially indicated, is unnecessary, and as a routine dangerous.

Immediately the child is born the patient is placed upon her back. This is a matter of importance, as it enables the practitioner to control the uterus without fatigue, and prevents the entrance of air, which is liable to set up putrefaction. As soon as the placenta has left the uterus, it may be gently expressed from the vagina. On no account, except in some cases of hæmorrhage, should it be expressed from the contractile portion of the uterus; a practice which is often followed by retentions of membranes, post-partum hæmorrhage and putrefaction. The expulsion of the placenta from the upper part of the uterus is indicated by the organ, which may have contracted down into the pelvis, suddenly rising up to the umbilicus; a bulging forward of the lower uterine segment, often mistaken for a full bladder; and expulsion of four to six inches more of the umbilical cord. The latter sign can be easily observed if the second ligature, which in the usual position

serves no useful purpose, has been applied as close as possible to the vulva ; and if this ligature be subsequently found four or five inches from the labia, the placenta must have left the uterus. The placenta having been expressed, is rotated, and the membranes, twisted into a cord, gently withdrawn : the external genitals cleansed, a clean diaper applied, and, if the discharge be not excessive, and the uterus well retracted, a binder applied. A patient thus delivered may be regarded as safe, and subsequent douching, unless specially indicated, is to be avoided as unnecessary and a possible source of infection.

FEVER (Scarlet). (See also "Rötheln.")

J. Madison Taylor, M.D., Philadelphia.

Dr. Clement Dukes[1] compares the distinguishing characteristics between epidemic roseola or rose rash, and scarlatina or scarlet fever, as follows :—

Epidemic Roseola or Rose Rash.	Scarlatina or Scarlet Fever.
(1,) *Premonitory Symptoms.* — In many cases none, even where there is a copious eruption; neither headache, nor vomiting, nor catarrh, nor cough, but frequently sore-throat.	(1,) *Premonitory Symptoms.* — Usually malaise for a few hours, and frequently vomiting. If the attack be slight the patient only feels tired, but usually complains of some amount of sore-throat.
(2,) Its *season* is spring and summer.	(2,) Its *season* is autumn and winter.
(3,) *The incubation period* is usually eighteen days, but with a range of from nine to twenty-one days.	(3,) *The incubation period* is from two to three days, with a range from a few hours to seven days; it very rarely extends beyond the fifth day.
(4,) *The eruption* is usually the first noticeable symptom, and will cover the whole body with a considerable rash in a very few hours. It has a bright *rosy red* hue, is raised somewhat from the surface of the skin, and often occurs in patches, with well-defined edges. The sensation of heat of the skin to the touch, even where the rash is very full, is much less than in scarlet fever.	(4,) *The eruption* is diffuse, *dusky red*, papular in character, and appears first behind the ears. It presents a *gooseflesh* appearance. No isolated dots at any stage, or patches raised and with well-defined margins. It appears early about the clavicles and on chest and the covered parts of the body. Not so full as in epidemic roseola, and markedly hot to touch.
(5,) *Additional Symptoms* :—	(5,) *Additional Symptoms* :—
(*a*) *Throat.* — The fauces are usually reddish, but bear little relation to the extent of the rash.	(*a*) *Throat.*—The appearance of the fauces may vary from the most insignificant affection to an intense dusky redness, with marked swelling, showing sometimes white spots of inspissated secretion; and the severity of the throat affection more marked.

Epidemic Roseola (*continued*).	Scarlatina (*continued*).
(*b*) *Eyes.*—The conjunctivæ are pink and suffused.	(*b*) *Eyes.*—Normal.
(*c*) *Glands.*—The lymphatic glands throughout the body are enlarged, hard, and tender, and feel like peas. Those mainly affected are the posterior cervical, the axillary and the inguinal.	(*c*) *Glands.*—The lymphatic glands of the throat and neck can be scarcely detected during the first few days, but subsequently they may be enlarged *in proportion to the severity of the faucial affection.*
(*d*) *Desquamation.*—In the scarlet fever variety the desquamation may be slight, or as complete as possible, even extending to a general desquamation of the hands and feet: but the desquamation bears no relation to the intensity of the eruption, for it often happens that a very full eruption may be followed by little or no desquamation, and what does occur is over in a week or two. On the other hand, a full eruption may be attended by a general peeling as free as in the worst cases of scarlet fever, but always in small scales rather than in flakes or sheets.	(*d*) *Desquamation.*—The desquamation always bears a ratio to the extent of the eruption. A copious eruption signifies a free desquamation, while a scanty eruption is followed by a sparse peeling, which, however, does not cease for many weeks. *It commences invariably by a peeling of the tongue on the fourth day*, which extends to the lips and is followed by peeling of the face and behind the ears; one of the easiest places in which to detect it early is on the ears themselves. Desquamation is in shreds rather than scales, and very free about hands and feet.
(*e*) *Kidneys* rarely affected.	(*e*) *Kidneys.*—Albuminuria very frequent. Acute nephritis very liable unless the treatment be appropriate.
(6,) *Sensations of Illness.*—Where the eruption is slight there is no illness of any kind; and where the eruption is copious the *feeling* of illness is sometimes scarcely apparent, although I have seen boys really ill with it.	(6,) *Sensations of Illness.*—In slight cases there is no apparent illness; but I have never seen a case with a severe eruption where the patient was not really, and also felt, very ill.
(7,) *Tongue.*—Clean or slightly furred, never coated with a thick white fur, which peels on the fourth day, leaving the tongue raw.	(7,) *Tongue.*—Coated with a thick white fur, peeling off from the tip and edges on the fourth day, leaving the "strawberry" tongue.
(8,) *Pulse.*—In slight cases normal, and where the case is a well-marked one the pulse is quickened, but bears a ratio to the temperature; that is to say, where the pulse is accelerated the temperature is raised to a proportionate degree.	(8,) *Pulse.*—Even in slight cases it is accelerated, and in severe cases very greatly quickened, and always out of all proportion to the height of the fever; that is to say, even with a temperature only just above normal (99° F.) the pulse will be very rapid (120).

EPIDEMIC ROSEOLA (*continued*).

(9,) *Temperature* varies from 98·4° to 103° or 104° F.; but even with a very extensive rash the temperature is not necessarily high.

(10,) *Course of Illness.*—The symptoms, however severe, pass off in a few days, leaving comparatively little feeling of illness. The glands continue enlarged and tender for about three weeks, and I have seen the submaxillary glands swollen. Desquamation continues for two or three weeks, or longer.

(11,) *The Period of Infection.*—I do not know any illness which is so infectious in its earliest stage, even before any symptoms are manifest. It arises from this cause that schools suffer to such an extent when once it has found entrance. In its later stage, even while desquamation is taking place, it is not infectious beyond two or three weeks, after thorough disinfection.

(12,) *Protection.*—The attack affords no protection against scarlet fever.

(13,) *The duration of Infectiveness.*—From ten to fourteen or even twenty-one days where efficient disinfection is in force.

(14,) *Sequelæ.*—Practically none; but I have seen the submaxillary glands enlarged.

(15,) *Termination.*—Usually complete recovery in a fortnight.

SCARLATINA (*continued*).

(9,) *Temperature* ranges from 99° to 106° F., but never increased in the usual ratio to the pulse. A full rash always means a high temperature.

(10,) *Course of Illness.*—The illness gradually subsides in from four to seven days. Desquamation commences as eruption fades, and continues for from seven to eight weeks or more, and lasts longest on the hands and feet.

(11,) *The Period of Infection.*—The least infectious of any illness in its early stages. After the first forty-eight hours it is very infectious, but how long the infection lasts I am not prepared to say. Until this can be ascertained the only safe rule is to assume that it may last as long as desquamation itself, although I am quite clear that this is inaccurate.

(12,) *Protection.*—The attack affords no protection against the scarlatina or measles variety of rose rash.

(13,) *Duration of Infectiveness.*—From six to eight weeks or more—*i.e.*, when the desquamation has ceased; but infection probably does not last so long after efficient disinfection.

(14,) *Sequelæ.*—Nephritis suppuration of the submaxillary lymphatic glands and others, otitis, rheumatism, and endocarditis.

(15,) *Termination.*—Usually complete recovery, but sometimes a prolonged convalescence on account of the sequelæ; and the disease shows a high mortality in the very young.

(16,) *Treatment.*—Every case of scarlet fever, however slight, requires twenty-one days of lying in bed absolutely. The patient should be clothed in a flannel night-shirt, and the skin daily greased with carbolic or eucalyptus oil. No food should be given for the first week, except milk and farinaceous food, however slight the illness, for this helps to guard against nephritis.

It is essential to isolate cases until all desquamation has ceased *from the hands and feet*, for this process sometimes occupies several additional weeks. I have acted on this assumption for many years without harm, even transferring boys to their homes. Of course, complete and thorough disinfection is imperative. In roseola, on the other hand, the patient may be permitted to get up on the fifth or six day or as soon as his strength permits, irrespective of the desquamation, and without danger from sequelæ. He then requires three or four days in doors, followed by five or six in the fresh air ; and may safely join his schoolfellows at the end of from fourteen to twenty-one days, notwithstanding desquamation, provided the disinfection has been thorough.

Dr. Childe,[2] records an instance of two attacks of scarlatina occurring within four months in a girl of thirteen. Not only was the interval very brief, but the immunity or resistance derived from the first attack appears to have been *nil*, the second attack being the more severe.

Dr. Allan Jamieson[3] considers that the best application to the throat is a spray of **Peroxide of Hydrogen**, 10-volume strength. The spray can be repeated from three times a day to once in two hours. It should be continued, the intervals being extended, till all redness and swelling other than normal have disappeared, and till its application no longer induces pain. As regards the management of the skin, in the stage of exanthem we must favour the developement of the rash by warm baths, which are best given at night, after which the entire surface must be smeared with 8 ounces of **Almond** or **Olive Oil**, containing a fluid drachm of **Carbolic Acid** and 2 to 4 fluid drachms of **Oil of Eucalyptus**. When desquamation commences the warm bath must be supplemented by soap. The patient must be kept in bed for the first three weeks, and should not be allowed to mix with others till the peeling is completed, and the hair washed several times.

Dr. Flint[4] raises the question of the prophylaxis of scarlatinal nephritis and advocates a strict adherence to a milk diet for a month after the cessation of fever, but many practical difficulties were found to prevent this being strictly carried out. He found that his cases could be divided into three groups : (1,) Those in which an exclusive milk diet was well tolerated for a whole month ; (2,) Those in which a mixed diet, consisting of milk and solid food was employed ; and (3,) Those in which milk was not tolerated in any quantity, and the diet was therefore necessarily composed chiefly of solid food. In the first group, after the first month the modified milk diet of the second group was given for a fortnight, and then solid diet was allowed. At the beginning of the fever peptonised milk was employed where there

was any irritability of the stomach; and junket, whey, buttermilk, skimmed milk, or koumiss was sometimes administered. If albumen appeared, the patient was put back on a milk diet, and kept on it till two weeks after the disappearance of the albuminuria. The second group received two solid and two or three milk meals daily, the former consisting of clear soups, green vegetables, bread and butter, cream, eggs, fish, oysters, chicken, and (later) a little fresh beef or mutton roasted, broiled, or boiled. Strict injunctions were given that with each of these meals a liberal allowance of beverage was to be taken—either hot water with a little milk, very weak tea, or slightly sweetened cocoa. The third class of patients received the solid foods just enumerated; and special stress was laid upon their taking a liberal allowance of warm drinks at each meal, with a mild diuretic or alkaline salt in water after each meal and at bed-time. It was found best to use the various potash and soda salts in turn.

REFERENCES.—[1] "Lancet," p. 793, March 31, 1894; [2] "Practitioner." Jan., 1894; [3] "Med. Magazine," vol. i., No. 11, 1893; [4] "New York Med. Journ.," January 6, 1894.

FILARIA MEDINENSIS (Guinea Worm Disease).

T. Colcott Fox, M.B.

Patrick Manson[1] condemns the usual methods of extracting guinea worms, unless the worm is so situated that it can be cut down upon and taken out entire. The filaria, if left to herself, completes her parturition in about fifteen to twenty days, and begins to be discharged spontaneously without inflammatory symptoms. The treatment by rolling on a piece of wood etc., takes about as long, and therefore Manson argues that it is best not to be meddlesome and court a disastrous breakage and rupture of the worm, but to encourage the normal parturition to its termination. All that is needed is to protect the parts from injury by a simple water dressing, and to pour on cold water two or three times daily (the natural uterine stimulant). Sometimes a patient can be sent to running water with due precautions as to dissemination of the parasite. When parturition has stopped, if the worm be not spontaneously discharged, she can be reeled out cautiously, douching with cold water several times daily and applying in the interval dry antiseptic dressings.

Vinze,[2] after alluding to the disastrous consequences following the breakage of the worm and her death in the tissues, says that when she appears under the skin as a ridge she can be removed there and then. The part should be kept covered with a wet cloth dipped in simple cold water for about ten minutes to make the ridge appear more prominent. Then an incision is made with a scalpel just to one side,

avoiding injury to worm. A dissection is made of the skin and fascia on each side of the worm, and a strong needle is introduced beneath the worm and gently lifted up. She is then taken wth the fingers and extracted entire by gentle coaxing and friction of the surrounding parts.

Forbes,[3] recommends for prophylaxis boiling the drinking and cooking water for nearly a quarter of an hour, then filtering it, and adding a little citric acid. Every third morning a little sulphur should be taken.

Forbes believes that a radical cure results from impregnating the patient with small doses of **Precipitated Sulphur**. He does not explain how this is brought about.

If surgical interference is resorted to its application should be prompt. The point of a bistoury is entered about the site of the vesicle, and carried rapidly round in the direction of the worm's body with the edge outwards, in a sweeping manner, and the worm brought out through the incision. This treatment seems to be rather a hazardous one.

Felix Roth,[4] gives his experience in the treatment of cases of *some years' duration.* He lays the burrows (fistulous tracts) freely open, and puts strips of lint soaked in **Carbolic Acid** lotion (1 in 15) in the wounds. Oiled silk and wool and a tight bandage are then applied. The dressing is changed daily. When unable to open the burrows he applies compresses soaked in a similar lotion.

Emily[5] declares that he has met with great success by local injections of 1 in 1000 solution of **Perchloride of Mercury.** It kills the worm which is subsequently absorbed, as a piece of sterilized catgut would be. A perfect cure results in three or four days. " He divides his cases into three categories : first, those in which a hard swelling, associated with some pain and cord-like convolutions under the skin, indicates the presence of a guinea-worm about to break through ; secondly, a similar but fluctuating swelling indicating that the process has advanced still further ; thirdly those in which this process has been completed, and part of a guinea-worm is protruding from a hole on the ulcerated surface of the limb. The first, he says, is the most hopeful for successful and rapid cure. He simply injects—and only once—a Pravaz's syringeful of bichloride of mercury solution in fractional quantities by several insertions of the needle into the swelling, making the punctures as near the assumed position of the body of the parasite as possible ; this plan he follows in the first and second type of the case. In the third type he injects, by puncturing it, the protruding body of the parasite itself, and any swelling in the

vicinity of the opening from which it is hanging. In the last instance he says the parasite can be easily withdrawn on the day following the injection ; in the other two cases the swelling rapidly disappears, and nothing is ever seen of the worm, which, it is to be presumed, has been killed and is subsequently absorbed."

Vesey Davoren,[6] has practised Emily's treatment in two cases by injecting subcutaneously perchloride of mercury solution (1 in 1000) in four or six places round the site of the worm, and subsequently freeing any pus that collected. Cures resulted in ten to fourteen days.

Randle[7] criticises and condemns the various methods adopted to bring about a cure, such as galvanism, assafœtida internally and externally, the movement of the affected part in running water, extraction by coaxing, sucking or cupping, the local application of alum powder. Randle applies every two hours **Carbolized Poultices** made by adding carbolized oil (1 in 15) to linseed meal, gari, or foo-foo, in order to reduce inflammation or attract the worm to the surface. He then extracts the worm by rolling it on a stick or quill, and aids by making intermittent pressure around. If the worm breaks, he poultices and uses Paget's knife freely. In this way he claims that no case should be under treatment for more than fourteen days.

REFERENCES.—[1] "Hygiene and Diseases of Warm Climates," 1893; [2] "Indian Med. Gazette," July, 1894 ; [3] "Lancet," p. 471, February 24, 1894 ; [4] Ibid., March 31, 1894 : [5] Quoted "Brit. Med. Journ.," from "Archives de Méd. Navale," June, 1894 ; [6] "Brit. Med. Journ.," [7] "Lancet," Jan. 20, 1894.

FILARIASIS.

Synopsis.—(Vol. 1894, p. 294). **Thymol** in doses of from 5 grs. twice daily to 15 grs. four times a day without effect.

FRACTURES (of the Tibia and Fibula).

W. Arbuthnot Lane, F.R.C.S.

A New and More Perfect Method of treating some cases of Oblique Simple Fractures of the Tibia and Fibula. — In papers read before the Clinical Society [1] and at the meeting of the British Medical Association [2] at Newcastle last year, I showed that many of the principles which had guided the surgeon in the treatment of solutions of continuity of any part of the lower extremity, whether produced by accident, as in the case of fractures of the long bones, or by operation, as in excisions and erasions of the knee, hip, and ankle joints, were absolutely false, and that in consequence of their being slavishly applied the patient suffered mechanically very considerably. By the old methods by the use of the vertical foot-piece, in the case of excision

of the hip or of intracapsular fracture, an unsatisfactory joint on the dorsum ilii was usually produced behind the transverse axis of pelvic rotation ; in the case of fracture of the shaft of the femur, shortening followed from the winding up of the lower fragment upon the upper through an angle of 45°, the muscular and other ties in the length of the femur being abnormally tense, owing partly to hæmorrhage beneath them and into their substance, and partly to their spasmodic contraction ; in the case of erasions or excisions of the knee and ankle the axis of the leg and foot in the one and of the foot in the other was altered considerably from the normal ; and in the case of fractures of both tibia and fibula not only were the bones wound up on one another and shortening was produced, but the differentiation between the directions of the axes of the fragments was enormously increased by rotating the foot inwards till it fitted the vertical foot-piece.

By adapting to practice the principles obtained by a knowledge of the external rotation of the leg which exists in the position of rest, I found that I could obtain excellent results in the case of fractures of the femur and in the solutions of continuity at the hip, ankle, and knee produced by operations for the removal of tubercular disease ; also, in the case of fractures of both tibia and fibula I succeeded in getting better results with the everted foot-piece than I had done with the old method, but it soon became obvious to me that fractures of the femur were on a very different footing to fractures of the tibia and fibula. By means of continued extension in the case of fractures of the femur, it was comparatively easy, after a time, to overcome the spasmodic muscular contraction and to stretch the tissues bulged by blood and bruised by the injury till the full length of the limb was obtained, when the extravasated blood had been absorbed ; but when the tibia and fibula were broken obliquely, I found it impossible to apply traction for any length of time sufficient to be of service ; also the presence of two bones in this portion of the limb rendered it difficult in most cases, and very often impossible to obtain anything like perfect apposition of the fragments. I derived great assistance from my house surgeon and dressers in constructing splints to carry out the principle of the equal rotation of fragments, and the drawings I am showing, and for which I am indebted to my dresser, Mr. Peters, who took great interest in them and helped me considerably in their development, illustrate their mechanical arrangements very well.

Figs. 9, 10 and 11 represent the splint used for solutions of continuity of the knee and ankle joints, and of the tibia and fibula. The trough is made of iron plate, sufficiently pliable to be moulded by the hand. It extends upwards to the fold of the buttock. It is perforated from

within outwards, so that the convex surface presents a number of jagged projections which prevent the bandage from slipping.

The foot-piece is made of wood or metal, and is connected to the trough by lateral supports. It is fixed upon an axis which corresponds to the normal axis of rotation of the limb in its length, and is placed about two and a quarter inches in front of the posterior limit of the heel. The splint is lined with elephant plaster.

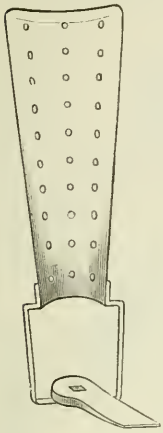

Fig. 9 represents the splint seen from the front.

Fig. 10.

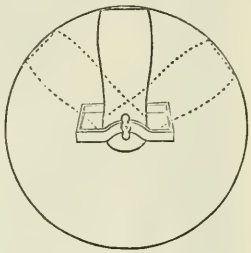

Fig. 11.

Figs. 10 and 11 show the mode of connection of the foot-piece with the rest of the splint, and the movements of which it is capable.

The normal angle of external rotation of the foot in the position of rest is determined by observing that of the other limb, when the foot-piece is fixed in that position. This angle varies considerably with the age and occupation of the individual. The foot is then bound separately to the foot-piece, the heel being supported by bandages, so that it does not rest upon any rigid structure (see *Fig.* 12). The fractured ends being brought into as good a position as possible, the leg is then bandaged firmly in the trough.

For fractures of the femur, or for erasions or other operations on the hip joint, the splint illustrated in *Fig.* 13 is used.

This consists of a trough, foot-piece, and outside splint which extends upwards into the axilla. In the case of erasions and operations upon acquired and congenital dorsal dislocations of the hip joint, dorsal dislocations of the head of the femur resulting from disease, and in fractures of the neck of the femur in which the neck is shortened by the fracture, it is often

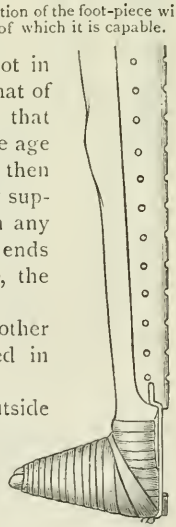

Fig. 12 represents the limb lying in the trough, the foot being firmly bound to the foot-piece. It is shown from its inner aspect.

advisable to allow the limb to rotate outwards to a greater degree than normal, in order to secure a joint in front of the transverse axis of pelvic rotation.

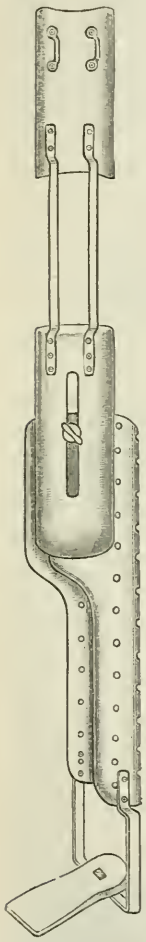

Fig. 13 represents this splint looked at from its outer aspect.

The advantage of the joint beneath the anterior inferior spinous process is well illustrated by a study of *Figs. A* and *B*, *Plate IX.*

This patient suffered from an extreme degree of bilateral congenital dislocation of the head of the femur on to the dorsum ilii. Her gait was most insecure and disfiguring, on account of the vertical play of the head upon the innominate bone and of the very marked lordosis.

The right joint has been operated on some months, and allows of very great freedom of movement, with absolutely no vertical play. That on the left side has not yet acquired the same movement, as the child has only been out of her bed on the sofa for a week or ten days. This movement she will acquire very shortly.

The right knee is flexed to show the free movement permitted in the joint, and the previous lordosis is replaced by a complete obliteration of the abnormally exaggerated lumbar curve. It is obvious, however, that the results which can be obtained in double dorsal dislocation by this method are not as good as when one joint only is affected. That it is not proposed to develop a joint beneath the anterior inferior spine when it is possible to replace the head of the bone in the acetabulum need hardly be stated here.

This, like the other splint, is reversible, and can therefore be used for either side.

Although I found that this method afforded a definite and considerable improvement over the results I had obtained from the use of the vertical footpiece, I came to the conclusion that in a large proportion of cases of fractures of the tibia and fibula by no form of manipulation and splinting could union in perfect position be arrived at. I next made careful and extensive enquiries among working men engaged in several labouring occupations in which much weight is habitually transmitted through the hip and knee joints, and particularly in those in whom, in addition, security of tread is of great importance

PLATE IX.

Fig. A.

Fig. B.

—as, for instance, men engaged in scaffolding, house-painting, etc.—as to whether they were influenced prejudicially by the alterations in the mechanics of the joints of their lower extremities, and especially those of the foot and ankle, which almost always follow upon the treatment of such fractures by manipulation and splinting, and I found that the results were simply appalling. If the individual was comparatively young at the time of sustaining the injury, a considerable amount of alteration in the axes of the fragments produced no great discomfort, but in people approaching or beyond middle life any variation in the axes resulted usually in progressive incapacity and discomfort These facts were verified independently by one of my dressers, Mr. Steward, who collected the details of the subsequent history of forty cases taken promiscuously from hospitals and infirmaries.

I do not allude to the presence of any considerable shortening or deformity, for with moderate skill and care such conditions can be generally avoided, though in some cases deformity and shortening are noticeable features, but to the progressive discomfort, pain and insecurity which results from an alteration in the physiology of the joints of the lower extremity, accompanied of necessity by mechanical changes in them[3].

In this paper I will confine myself solely to the consideration of the physical capacity of the man to perform his accustomed heavy work after he has sustained an oblique fracture of both bones of the leg, or, in other words, of his relative financial value as a machine, both before and after the accident, and I have no hesitation whatever in asserting that under the methods of treatment at present adopted, not only is the man totally incapacitated from earning a living for an unnecessarily long period, but in a considerable proportion of cases he is unable subsequently to perform such heavy work as he was able to do before the injury, so that he is obliged to follow some less remunerative pursuit, if, indeed, he has not to depend solely on charity.

In fact, his machinery is financially depreciated by the accident, sometimes to the extent of 70 to 80 per cent. at least of its original value.

If what I state is true, the form of treatment of such fractures which is universally adopted in our hospitals is simply disastrous, and can only be perpetuated because we are unaware of the financial loss, or even ruin, which our very imperfect surgical methods entail on our unfortunate patients. Though the shortening and deformity are usually trifling, the somewhat complicated displacement of the ends of the fragments on one another is sufficient to completely alter, and

often irretrievably damage, the machinery of the lower extremity. The deviation of the axes of the lower fragments of the tibia and fibula from the directions they originally occupied when in continuity with the upper portions of the respective bones causes pressure to be transmitted through the joints of the ankle and foot, of the knee, and to some extent even of the hip, in such an abnormal manner that the individual experiences not only a feeling of insecurity in these joints, which is especially marked in the foot and ankle, but he also suffers from progressively increasing pain and discomfort.

This means that the anatomy of the several joints which are called upon to perform a function other than that they were accustomed to carry out must alter in consequence of, and in proportion to, the degree in which the directions of the lines of pressure, which is transmitted through the joints, are changed.

Under these altered circumstances, the joints are unable to carry out their physiological functions with the same accuracy and perfection that they did previous to the accident, and this inability is a progressive one, and is accompanied by pain and discomfort which increases rapidly, and is most marked in those who sustain such fractures when past middle age.

There are many other troubles which the patient experiences because of his inability to use the muscles and joints of his leg with the same accuracy, ease, and freedom as before, such as œdema, eczema, ulceration, etc.

Even if there is only a small proportion of truth in what I assert, and in my opinion my experience fully justifies me in making the assertion, it is obvious folly to continue our present methods of treatment, especially as more effectual means are ready to hand.

Why should we hesitate for one moment to bring common-sense mechanical principles to bear in the case of simple fractures of the tibia and fibula when most surgeons of the present day would not dream of doing otherwise in the case of fracture of the patella with separation of fragments? May I ask this question? Are we able by operative measures to treat oblique fractures of the tibia and fibula so that there shall be no alteration from the normal in the lines of pressure through the several joints? In other words, can we restore the bones to their original form? This can certainly be done, and at a minimum risk to the patient, by freely exposing the fragments at the seat of fracture, by bringing the surfaces into accurate apposition and retaining them permanently in that position.

Such operative measures offer to the patient the following advantages :—

(a,) They at once relieve him from the pain of any movement of the fragments upon one another.

(b,) They free him from the tension and discomfort due to the extensive extravasation of blood between and into the tissues.

(c,) They shorten the duration of the period during which he is incapacitated from work, since union is practically by first intention and consequently very rapid and perfect.

(d,) Lastly, and by far the most important, they leave his skeletal mechanics in the condition in which they were before he sustained the injury.

The two questions which now arise are: Is much difficulty experienced in bringing the surfaces into accurate apposition? and, What is the best method of retaining them in that apposition?

In answer to the first question, it is often very difficult, even when the tibial fracture is freely exposed, to bring the surfaces into apposition by means of manipulation of the limb and of the broken ends, but in every case in which I have used screw pressure, I have succeeded in doing so. At the same time, it is obvious that even though by these means the surgeon may fail in obtaining perfectly accurate apposition, he will get union with very much less displacement than with the ordinary methods, and consequently a correspondingly better result.

Now as regards the best means of fixation of the fragments: In my earlier cases I used silver wire, but soon gave it up, as it was open to two great objections. Firstly, as it is necessary to fasten its ends, it could only be passed in certain directions with safety, and to secure it satisfactorily, one was at times obliged to incise the parts very freely. Secondly, one frequently found that no amount of traction upon the ends of the wires would retain the surfaces in accurate apposition after the grip of the lion forceps was relaxed.

Therefore, I decided to treat the bones as one would the broken leg of a table or chair. The surfaces were brought into accurate apposition, and kept in their normal relationship by lion forceps. Holes were drilled above and below the forceps, and screws were driven in. The screws could be passed in any direction, and they retained the surfaces in an apposition more accurate and more forcible than I fancy can be obtained by any other mechanical arrangement.

As far as I know, they cause no subsequent trouble; should they do so, they can be removed through an incision equal to the diameter of the head of the screw.

Although I have limited myself to the consideration of the difficulties experienced in establishing exact continuity of the fragments in

oblique fractures of the tibia and fibula, yet occasionally in a transverse fracture of the tibia it may be absolutely necessary to expose the broken ends before they can be brought into accurate apposition.

If the conclusions at which I have arrived are correct, it is obvious that any surgeon who resorts to the treatment of oblique fractures of both tibia and fibula in labourers by manipulation and splinting, without having previously explained to the patient the consequent disadvantages under which he will very possibly labour, and urged on him the importance of operative interference, is acting unjustly to his patient. Much depends, however, upon the age and the character of the occupation of the individual.

In the case of compound fractures of these bones, it is equally advisable to procure perfect union, but for obvious reasons the surgeon is unable to offer the patient the same certainty of a successful result as he can when operating on a recent fracture.

Though in most of my cases I used the ordinary carpenters' screws, I would not recommend them for such a purpose, for the reason that the threads are often very imperfect, and because the smooth portion exceeds somewhat in its circumference that of the portion bearing the thread, and tends to split and fissure the bone. The tendency to fissure of the compact bone is also obviated by the use of a rimer. This instrument is used to increase the size of that part of the hole which carries the barrel of the screw in order to prevent splitting of the bone. Messrs. Down Bros. made me a set of steel screws, which are most carefully constructed to meet the defects referred to above. The form of the heads is altered so as to obviate the presence of any sharp steel edge immediately beneath the skin. They are also plated, so that they can be boiled without any fear of rust due to those which are not required not being carefully dried.

The screws of various lengths are gauged to two calibres, for each of which a drill and rimer are provided.

REFERENCES.—[1] Cases illustrating a new operation for dorsal dislocation of the head of the femur, and some points in the surgery of the hip joint; [2] The fallacy of the vertical foot-piece; [3] Chronic traumatic arthritis, "Lancet," Jan. 30, 1892, and Trans. Path. Soc., 1886, The causation and pathology of the so-called disease, rheumatoid arthritis, and of senile changes.

FRIEDREICH'S DISEASE.

Hector W. G. Mackenzie, M.D., F.R.C.P.

In a recent number of the "American Journal of Medical Sciences" I reported a case of Friedreich's disease,[1] the principal interest of which lay in the fact that it was isolated, none of the patient's

brothers or sisters, of whom there were several, both older and younger, or other relations being affected. During the last few years similar isolated cases of the disease have been reported sufficiently frequently to show that the occurrence of the disease in several members of the same family is a non-essential feature.

Among those in addition to myself who have published isolated cases may be mentioned Ladame,[2] Ewart,[3] Dreschfeld,[4] Inglis,[5] McCaw,[6] Chauffard,[7] Nammack[8] and Mackay.[9]

The term hereditary ataxia never had much to recommend it. Although the occurrence of the disease in certain families was a very striking feature of the cases originally described by Friedreich, hereditary was not exactly the word to express this fact. Direct inheritance, says Gowers, has been traced in only a few instances. Such a group of cases as has been published by Brown[10] to which I shall refer later on, has an equal claim to the title hereditary ataxia, although there are good reasons to believe that it belongs to a different category from Friedreich's disease. The existence of the isolated type is the best reason for discarding the misleading name of hereditary ataxia and using that of Friedreich's disease for a malady the symptoms of which are as well marked and characteristic as those of any disease with which we are acquainted.

The rarity of the disease is perhaps not so great as was at one time thought to be the case when the family character was believed to be such an essential feature.

The family type was easily recognized, for the simple reason that this remarkable disease was present in several members of the same family.

The isolated type is more difficult of diagnosis and is very possibly not recognized on account of the practitioner's want of acquaintance with the essential features of the disease.

The combination of symptoms however makes, as I have said, a very characteristic whole, and I think a brief account of the features of the disease and the possible errors of diagnosis which may be made may prove useful to the readers of the "Medical Annual" and possibly bring to light fresh cases of the isolated type.

Ætiology and Period of Onset.—The onset has been frequently observed after an acute disease, a fall or other injury, one of the eruptive fevers, or typhoid. In my own case the starting point appeared to be measles.

Chorea has also been recorded at the onset in a good many cases, but the choreiform movements of the disease itself have probably erroneously suggested the diagnosis of chorea.

Alcoholic excess in the parents has been observed, but is probably an accidental association.

There is no apparent connection of syphilis with the disease, unlike what is the case in locomotor ataxy. The disease hardly ever has its onset after the age of twenty. Many cases date from infancy or early childhood. The two sexes are about equally affected.

The Symptoms of the Disease.—The main symptoms may be comprised under the following heads: (1,) A characteristic form of incoordination affecting the gait, attitude, and movements generally; (2,) Jerky movements of the extremities and of the head and neck suggestive of chorea; (3,) Progressive paresis of the voluntary muscles; (4,) Nystagmus, generally lateral, slight, and only elicited on fixing; (5,) The knee-jerks usually absent; (6,) Deformity of feet; (7,) Lateral curvature; (8,) Affection of speech.

The Gait.—The gait forms a very characteristic feature of the disease. In a typical case it is unsteady, clumsy and jerky. The patient walks on the front part of the feet with the head and the upper part of the body forward, and sways as he goes along from side to side. If a tracing be taken of his track the latter will be found to be zig-zag. Sometimes he will deviate to one side or other. This zig-zag course is a peculiarity of the disease and forms a point of distinction from locomotor ataxy.

The swaying and unsteadiness are usually markedly increased on turning.

Attitude.—The patient stands as a rule with legs wide apart and head inclined forward, and with a certain amount of swaying. Even with open eyes he may stagger and require to hold fast to some object to steady himself.

Romberg's symptom (the inability to stand steadily with the eyes shut) is usually present, although in some cases the shutting of the eyes does not increase the unsteadiness which is already present.

The Jerky Movements.—More or less jerky movements have been noticed by most observers. Sometimes the movements have suggested the diagnosis of chorea. Occasionally they have been so marked as to resemble athetosis.

As a rule the movements are of small amplitude and give to all that the patient does a jerky character.

Charcot drew attention to an action of the hand when about to seize any object, which he likened to the descent of a bird of prey on its victim. The hand hovers with some jerkiness for an instant or two and then descends rapidly and directly on the object.

PLATE X.

The movements affect the head and neck as well as the extremities, but, as a rule the face is very little, if at all, affected.

In Chauffard's case,[7] already referred to, the movements were those of athetosis.

Nystagmus.—Nystagmus is one of the later symptoms of the disease, and is a very valuable sign when present. It may not appear for many years after the ataxy. It is produced when the patient fixes an object and the movements are horizontal and as a rule slight. It has to be carefully looked for. It is needless to say the patient is quite unaware of its presence. Other ocular troubles are almost unknown.

Paresis.—Muscular power may still be very good when a very considerable amount of ataxy and general jerkiness have developed. It gradually, however, becomes impaired. The paresis first affects the lower extremities and is always greatest in them. It tends to progress upwards, but seldom becomes complete.

The Knee-Jerks.—Absence of the knee-jerks is the rule in this disease. Ladame goes so far as to say that one will do right always to distrust the diagnosis of this disease when the knee-jerks are not lost, although all the other symptoms would seem to confirm it. The rule however, is not an absolute one, and cases have been published by such authorities as Bramwell,[11] Senator,[12] Anderson,[13] etc., in which the knee-jerks, though slight, have been present. Other observers, Ewart,[3] Goodhart and Carpenter,[14] Lyman,[15] have published cases in which the knee-jerks have even been increased.

In the series of twenty-one cases with increased jerks already referred to as published by Brown,[10] the symptoms are certainly atypical and the diagnosis of Friedreich's disease is disputed by Ormerod[15] and Bernhardt.[16]

Deformity of Foot.—Deformity of foot is a very frequent accompaniment of the disease. The foot becomes stumpy and short with highly arched instep and excavated sole, and the toes, especially the great toes, dorsally flexed with prominent extensor proprius pollicis. This condition of equinus probably is the result of over action of the calf muscles with weakening of the antero-lateral group. Through the kindness of Dr. Mackay, of Devizes, I have been supplied with the excellent illustrations showing this deformity (*see Plates X, XI*).

Deformity of the hands is more uncommon, but the claw-like hand known as *main en griffe*, has been observed by Bramwell[11] in three cases in one family.

Lateral Curvature or scoliosis is a very frequent result of the disease. It is most important for the practitioner to bear this fact in mind as well as that of the foot deformity, for these deformities

are sometimes the first symptoms to excite the parents' anxiety. One finds in the histories of cases of this disease that it has not been uncommon for the patient to be sent to the surgeon in the first place, as my own patient was, on account of curvature or foot deformity. This is well illustrated in the cases recently published by Tresidder[17]. According to Hallion,[18] curvature has been observed in half the cases, and although it generally follows, it sometimes precedes the other symptoms.

Affection of Speech.—This is usually a late phenomenon. The speech becomes slow and hesitating, monotonous, drawling and scanned.

Mental Condition.—The mind is usually unaffected. In some cases there has been a high development of brain power. One patient took a brilliant University degree. My own patient was bright and intelligent for her station in life. Ladame[2] has drawn attention to a tendency to unprovoked and uncontrollable laughter.

Negative Symptoms.—In addition to the presence of these symptoms, one may here draw attention to the absence of certain other symptoms which serve to establish the diagnosis and to differentiate the disease from others with which it might be confounded : (1,) The absence of any sensory disturbance. There are no anæsthesias, no neuralgias, no lightning or girdle pains ; (2,) There are no visceral crises; (3,) The pupils react normally ; (4.) There is no optic atrophy.

Course and Duration.—The course of the disease is a very slowly progressive one. Its march proceeds from below upwards, attacking in order the legs, trunk, arms, larynx, tongue and eyes. The characteristic symptoms of ataxy and tremor become gradually aggravated.

Life may not be appreciably shortened.

The *diagnosis* has to be made from cerebellar disease, from locomotor ataxy, from disseminated sclerosis, and at an early stage from chorea :—

(1,) *From Cerebellar Tumour.*—The reeling gait is very suggestive of cerebellar tumour, but the absence of headache, of vomiting, of optic neuritis, and the affection of the arms, the presence of curvature or talipes and the history are usually sufficient to establish the differentiation.

(2,) *From Locomotor Ataxy.*—The following points should generally serve to differentiate the two : (*a*,) The age and history ; (*b*,) Symptoms peculiar to Friedreich's disease, absent in locomotor ataxy. Jerky movements, zig-zag course, nystagmus, affection of speech, curvature, and talipes ; (*c*,) Symptoms peculiar to locomotor ataxy, absent in Friedreich's disease, sensory disturbances, anæs-

PLATE XI.

thesia, lightning pains, visceral crises, Argyll Robertson pupils, optic atrophy.

(3,) *From disseminated Sclerosis.*—(*a*,) The knee-jerks nearly always lost in Friedreich's disease are exaggerated in disseminated sclerosis ; (*b*,) The tremors of disseminated sclerosis are of very wide amplitude, of violent character and are only excited by muscular efforts ; (*c*,) While the disease still permits him to walk, the gait of the patient with disseminated sclerosis is very different from that in Friedreich's disease. In the one it is a general agitation, in the other inco-ordination ; (*d*,) Optic atrophy, vertigo, contraction of limbs, failure of mental power, apoplectiform attacks are typical of disseminated sclerosis, but are not usually met with in Friedreich's disease.

(4,) *From Chorea.*—That there is a real difficulty in distinguishing some cases of Friedreich's disease from chorea is shown by the mistakes which even experienced physicians have made in the past. Recent illustrations of this difficulty are given by McCaw,[6] Mackay,[9] Anderson,[15] and Wilson.[19] The principal points of distinction are the following : (*a*.) The jerky movements of Friedreich's disease are never unilateral as those of chorea frequently are ; (*b*,) The movements are as a whole much slighter in Friedreich's disease than in chorea ; (*c*,) As a rule they do not invade the muscles of the face ; (*d*,) Although the movements of the tongue may be jerky, there is not the characteristic elongating and shortening, nor the sudden withdrawal with the clucking sound so typical of chorea ; (*e*) The inco-ordination, gait and attitude, nystagmus, the abolition of the knee-jerks, and the deformities do not occur with chorea.

The Pathology and morbid Anatomy.—The few autopsies which have been made have shown an arrest of development as well as degeneration of the cord. The cord and bulb are slender and flattened and their volume and sectional area are much reduced.

There is sclerosis of the columns of Goll (or postero-median columns) in their whole length, similar sclerosis of the posterior part of the columns of Burdach (postero-lateral columns), while sclerosis of the anterior part is less constantly met with. The crossed (or lateral) pyramidal tracts and the ascending cerebellar tracts are also affected but to a less extent.

There is also atrophy of the cells and fine fibres of the posterior vesicular tract (columns of Clarke).

Professor Senator[12] has lately expressed his belief that arrest of development of the cerebellum is the essential feature of the disease. He looks upon the disease in the cord as secondary. This belief has previously been maintained by Hammond ("Journ. of Nerv. and

Men. Dis.", 1882). No doubt the ataxic symptoms are extremely suggestive of cerebellar disease. As Ladame has pointed out when discussing Hammond's views, the opinion that the disease has its origin in the cerebellum is not borne out by autopsies, and it is contrary to clinical observation, for the symptoms progress from below upwards and not from above downwards.

TREATMENT.--For the treatment of the disease little or nothing can be done.

Among drugs, **Arsenic** and **Nitrate of Silver** have been recommended. **Cod-liver Oil** is useful as helping to promote general nutrition.

It is needless to say that good diet, fresh air, and healthy surroundings will have a beneficial effect on the course of the disease.

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FURUNCULOSIS. *T. Colcott Fox, M.B.*

Van Hoorn,[1] washes the whole body with **Potash Soap** and warm water, then cleanses the furuncles and surrounding parts with sublimate lotion (1 in 1000) and covers these lesions with a mercury and carbolic acid plaster, which he changes every day. When the furuncles open he expresses the contents, and washes them with sublimate. If there was no fluctuation resolution occurred rapidly, but if suppuration ensued the course was more extended, but very satisfactory. New lesions were prevented.

Allan Jamieson[2] recommends **Ichthyol Varnish** (1 part ichthyol to 3 of water) to abort furuncles.

Debouzy[3] relates that **Yeast** is a very popular remedy in the countryside for recurrent boils and carbuncles. He has therefore tried it largely and met with astonishing and rapid successes. Sometimes the yeast gives rise to prolonged eructations and diarrhœa. The dose is 2 or 3 tablespoonfuls diluted with a glass of beer at meals.

The following internal treatment has been recommended :—

℞ Chlorate of Potash		Tinct. of Calumba	℥jss
Lactate of Iron	āā gr. xviij	Simple Syrup	℥iij

M. Ft. Mist. A dessert spoonful to be taken thrice daily.

Sir James Paget in his address to the Abernethian Society this year, 1894, in illustration of his thesis refers to the subject of recurrent crops of boils, and says **Quinine** is believed to be chiefly effective upon those in whom disease has its origin in some distant affection of malaria ; **Liquor Potassæ** for those who were gouty or had eczema ; **Yeast** in others, though how it acts is uncertain.

Shoemaker gives the following mixture for recurrent boils :—

℞ Chlorate of Potash		Tinct. of Calumba	℥ij
Lactate of Iron	āā gr. xviij	Simple Syrup	℥iv

Three teaspoonfuls to be given in the twenty-four hours.

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Synopsis.—(Vol. 1894, p. 301.) **Boric Acid**, 10 to 15 grs. daily in two doses, internally and washing with hot 4% solution of the acid. ℞ Chloral Hydrat., ℥ijss ; Aq., Glyc., āā ℥x; M. Soak a tampon in the solution and cover the boil, renewing constantly. ℞ Chloroformi, ℥j ; Essence of Cloves, ♏ 75—℥v ; Creasote, ♏ xv—xxx ; Camphorated Oil, ℥ij ; M. For external use only. ℞ Salicylate of Mercury, gr. ij—v ; Salicylic Acid, gr. xv—xxx ; Rectified Spirit, ℥ss—j ; Distilled Water ad ℥iv ; M. For external use only. ℞ Carbolic Acid, gr. i—iij ; Salicylate of Soda, Borax, āā, gr. xv ; Glycerine, ♏ 30 ; Chloroform Water, ℥ij ; M. Inject into the boil. ℞ Iodoform, gr. iij—v ; Salol, gr. viij—xv ; Carbolic Acid, gr. jss ; Ether, ℥ss—j ; Rectified Spirit, ℥jss—ij ; M. Inject into the boil. Application of gutta percha plaster of **Alumnol** (10 to 50%).

GALL BLADDER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

In a paper given before the International Medical Congress at Rome, and since published in the "British Medical Journal," April 28, 1894, we gave an epitome of seventy-eight operations which we had performed on the bile ducts or gall bladder, which number has since increased to close on a hundred. We then remarked that our conclusions were based on a much larger number of cases, which we had seen or been immediately concerned in in consultation with colleagues or other medical friends.

Among the prominent symptoms and complications of cholelithiasis which we have had experience of are :—

(1,) Spasms or biliary colic without jaundice, the attacks being repeated at longer or shorter intervals, coming on without apparent cause, usually starting in the epigastrium or under the right ribs, and radiating to the right scapular region or to the shoulder, and often ending in vomiting, which usually gives relief.

(2,) Collapse, due to the intensity of the pain, which we have known to cause death without any other complication.

(3,) Spasms followed by evanescent icterus.

(4,) Pain followed by persistent jaundice and enlargement of the liver, which may give rise to the suspicion of malignant disease, but which may usually be diagnosed from cancer by the presence of the next following symptom.

(5,) Attacks of pain accompanied by a feeling of chilliness or a rigor, and followed by increased temperature and then by profuse perspiration, the whole attack resembling one of ague.

(6,) Distension (hydrops) of the gall bladder without jaundice, ordinarily due to impaction of gall stones in the cystic duct.

(7,) Distension of the gall bladder accompanied by persistent jaundice, which always gives rise to a suspicion of malignant disease, either of the liver, or bile ducts, or of the head of the pancreas.

(8,) Ileus due to atony of the bowel, apparently dependent on the pain producing a profound impression on the nerves of the abdomen, leading to enormous distension and to the symptoms and appearance of acute intestinal obstruction.

(9,) Acute intestinal obstruction dependent on : (*a*,) Paralysis of gut due to local peritonitis in the neighbourhood of the gall bladder; (*b*,) Volvulus of small intestine ; (*c*,) Impaction of large gall stone in some part of the intestine after ulcerating its way from the bile channels into the bowel.

(10,) General hæmorrhages, the result of long continued jaundice,

either dependent on gall stones alone, or on cholelithiasis associated with malignant disease.

(11,) Persistent vomiting, with such serious digestive disturbances as to threaten death from exhaustion.

(12,) Localised peritonitis producing adhesions, which may then become a source of trouble even after the gall stones have been got rid of. We believe that nearly every attack of biliary colic is accompanied by adhesive peritonitis, as our experience has been that in all cases where there have been characteristic seizures adhesions are found.

(13,) Dilatation of stomach dependent on adhesions around the pylorus.

(14,) Ulceration of the bile passages establishing a fistula between them and the intestine.

(15,) Abscess of the liver.

(16,) Localised peritoneal abscess.

(17,) Abscess in the abdominal walls.

(18,) Fistula at the umbilicus or elsewhere on the surface of the abdomen.

(19,) Empyema of the gall bladder.

(20,) Suppurative choleangitis.

(21,) Septicæmia or pyæmia.

(22,) Gangrene of the gall bladder.

(23,) Perforative peritonitis due to ulceration or to rupture of the gall bladder or ducts.

(24,) Extravasation of bile into the general peritoneal cavity.

(25,) Pyelitis of the right side.

(26,) Cancer of the gall bladder or of the ducts.

(27,) Subphrenic abscess.

(28,) Empyema on the right side.

(29,) Pneumonia of the lower lobe on the right side.

(30,) Chronic invalidism and inability to perform any of the ordinary business or social duties.

(31,) Pain dependent solely on adhesions, the result of previous attacks of gall stones.

A study of cases operated on shows that where medical means have failed, surgery holds out very good hope of success in nearly every complication of cholelithiasis, if the patient be not too much exhausted to permit of any major operation.

Cases complicated with malignant disease, however, are decidedly unfavourable ones for operation, as has been shown in another place. First, because the subjects of cancer are not only as a

rule cachectic and worn down by disease before the surgeon is called in, and therefore unfitted to bear the shock of any operation; but, secondly, because such patients are particularly prone to hæmorrhage at the time of the operation, or subsequently, which may be uncontrollable.

We take the opportunity of correcting an observation made several years ago in a paper read before the Clinical Society of London, which we have since found to need qualification. We then remarked that there was more risk in operating on profoundly jaundiced patients, on account of hæmorrhage. While we still think there is greater risk in operating on such cases, we have found by ample experience that the danger is not simply from the presence of jaundice, but from the presence of jaundice combined with malignant disease; and we feel that we cannot emphasise too strongly the fact that operations undertaken on patients with malignant disease of the head of the pancreas, of the bile ducts, or of the liver, if combined with deep jaundice, are attended with very great risk, and that in such cases the great risk is not compensated for by the slight respite which may be given by establishing a biliary fistula, as recommended by some able surgeons.

It may, however, be worth remarking that, in order to avert the danger of hæmorrhage in jaundiced patients, we have found the administration of chloride of calcium for a few days before operation to make the blood more plastic and to lessen the tendency to bleeding, both at the time of operation and subsequently.

For this therapeutic measure we are indebted to Dr. A. E. Wright's researches on the "Coagulability of the Blood," published in the "British Medical Journal" for December 19th, 1891. After operation the drug may be continued either by the mouth or by nutrient enemata for some time with advantage. In jaundiced cases we prefer to ligature all bleeding parts, rather than to trust to pressure forceps for hæmostasis. The subject of diagnosis is too important to pass over in a few words, and too long to discuss in a short paper, but we would remark that there are two main points for consideration: First, are gall stones present? Secondly, Is there malignant disease? A careful consideration of the previous history will usually enable the former question to be answered, and especially the history of attacks of "spasms" preceding other complications. The latter question cannot, we believe, be always positively answered, but as a rule the preliminary history of "spasms," of pain preceding the jaundice, and of intermittent pyrexia, with the absence of enlargement of the gall bladder, will point to cholelithiasis.

It may be worth noticing that in all the cases of malignant disease with jaundice on which we have operated the gall bladder formed a perceptible tumour, whereas when the jaundice was dependent on gall stones there was no marked tumour present.

Another diagnostic point worth remarking is that in cholelithiasis there is usually tenderness on pressure over some point between the eighth or ninth costal cartilage and the umbilicus. In three cases the pain in the so-called "spasms" has been referred to the left side, thence radiating to the left scapular region, and in such cases we have found the pylorus adherent to the gall bladder or cystic duct. The so-called diagnostic operations of sounding for gall stones and aspiration of a distended gall bladder we believe to be futile and dangerous, and much better replaced by a small exploratory incision, when treatment can at the same time be carried out if required.

TREATMENT.—After medical treatment has been fairly tried and failed, we think most surgeons are agreed that surgical measures should be resorted to. While cholecystotomy is generally recognized as the operation to be aimed at in the treatment of affections of the gall bladder or bile ducts, especially in cholelithiasis, it is often impossible to say what operation will have to be done until the abdomen is opened. The indications for operating would seem to us to be as follows :—

(1,) In frequently recurring biliary colic without jaundice, with or without enlargement of the gall bladder.

(2,) In enlargement of the gall bladder without jaundice, even if unaccompanied by great pain.

(3,) In persistent jaundice ushered in by pain, and where recurring pains, with or without ague-like paroxysms, render it probable that the cause is gall stones in the common duct.

(4,) In empyema of the gall bladder.

(5,) In peritonitis, starting in the right hypochondrium.

(6,) In abscess around the gall bladder or bile ducts, whether in the liver or under or over it.

(7,) In some cases where, although the gall stones may have passed, adhesions remain and prove a source of pain and illness.

(8,) In fistula, mucous or biliary.

(9,) In certain cases of jaundice, with distended gall bladder dependent on some obstruction in the common duct ; but in such cases the increased risk must be borne in mind, as malignant disease will probably be the cause of the obstruction.

Supposing the case to prove a suitable one for cholecystotomy, and the gall bladder and ducts can be cleared without great difficulty

by means of forceps within and the fingers outside the ducts, the opening in the gall bladder can be sutured to the aponeurosis, which we think preferable to skin fixation, and drained, which we infinitely prefer to immediate suture of the opening.

But if the ducts cannot be cleared, what may be done?

(*a*,) Cholelithotrity or crushing of the gall stones *in situ* by means of the finger and thumb, or by padded forceps, an operation which we have successfully performed on numerous occasions, and which we prefer to the more formidable procedure of incising the ducts or of fixing the gall bladder to the intestine.

(*b*,) Choledochotomy, or incising the duct, whether cystic or common, the incision being afterwards sutured, not an easy matter on account of the depth of the parts to be coapted, but which we have found to be best effected by means of a rectangular cleft palate needle. A drainage tube should always be inserted into the right kidney pouch in these cases.

(*c*,) Cholecystenterostomy, or the making of an anastomosis between the gall bladder and intestine, easily effected if the gall bladder be dilated, with difficulty performed if the gall bladder be contracted, as is often the case. We have performed this operation three times, with immediate success and recovery in all, and with complete and permanent relief in two. The method we have employed is that by means of the decalcified bone bobbin, which enables the operator to accomplish the anastomosis rapidly, as only two sutures have to be employed, but in this operation we shall employ in future the Murphy button or some modification of it.

(*d*,) The daily injection of fluids after an interval of some days, through the cholecystotomy opening, which will either soften or dissolve the concretions. For this we have used hot water, a solution of taurocholate of soda, ether, and ether and turpentine, with more or less success; but we think that Dr. Brockbank's suggestion to use an injection of olive oil or a 5 per cent. solution of sapo animalis or oleic acid may be worth trying more fully.

(*e*,) Cholecystectomy may be required as a secondary operation in cases of stricture of the cystic duct, the common duct being free. On three occasions in which we have excised the gall bladder, it has been for mucous fistula depending on stricture of the cystic duct following on gall stones, and all the cases were completely and permanently cured.

Cholecystectomy can seldom be advisable or necessary as a primary operation in gall stones, and extremely rarely possible in malignant disease. In cholecystotomy, where it is impossible to bring the margins

of the incised gall bladder into the wound, and where the parietal peritoneum cannot be tucked down to meet the edges of the opening, we have made a tube of the omentum, but in such cases no hesitation need be felt in trusting to a drainage tube, as the peritoneal cavity soon becomes occluded around the drain, and there is little or no tendency to the passage of bile among the viscera, so that a suprapubic drainage opening is quite unnecessary. If thought desirable Murphy's button drainage tube may be used in such cases. With very few exceptions we have found a vertical incision along the upper part of the right linea semilunaris to give ample room, but if required we have not hesitated to get further room by a transverse cut in addition.

Suture of peritoneum, aponeurosis, and skin by separate stitches effectually guards against ventral hernia, if the patient be kept recumbent for from twenty-one to twenty-eight days, and if a firm oval pad be worn under a belt for a few months subsequently.

In all cases strict antiseptic precautions have been observed, and the abdomen has been left as clean and dry as possible.

In conclusion, we would emphasise, that with due skill and adequate care, operations on the gall bladder and the bile ducts are among the most successful of the major operations, but as many of them are extremely difficult, and as it is impossible to say beforehand whether any case may not prove so, we think such surgical work should be undertaken only by those who have had experience in abdominal surgery, and who have witnessed or helped in several operations of this kind. As soon as this is the case we shall cease to witness the varying rates of mortality in the hands of different operators, of from 50 to almost 0 per cent., and shall probably find that, excluding cases of malignant disease associated with jaundice, the all-round mortality will not exceed 5 per cent. We hope the time is not far distant when it will be fully recognized that though cholelithiasis, so far as its causes and its early treatment are concerned, is distinctly a condition for medical treatment, it is both unjust to the patient and unfair to the profession to continue medical treatment until serious complications supervene, or the patient is almost, if not quite, past relief, before the aid of surgery is invoked.

Gall Stone obstructing the Hepatic Duct.—Dr. Wyeth[1] related the history, and showed the specimen from a case of recurrent gall stone obstruction in which the gall bladder was found collapsed and empty at operation. The patient died unrelieved, and a post-mortem examination revealed a small concretion in the peritoneal cavity, and a stricture of the hepatic duct where the stone had ulcerated its way through.

We have previously described the crushing of a stone in the hepatic duct and another case in which one was suspected, but this case is probably the first in which a stricture of the hepatic duct has been proved.

Dr. Murphy gave a paper before the International Congress, at Rome, advocating the operation of cholecystenterostomy in cases of obstructed bile ducts, and he proved that by means of his button this could be done quickly and with great probability of success. At the same meeting we argued the desirabilty of clearing the ducts where possible, and only reserving the anastomosis operation for exceptional cases where that was impossible as in stricture or where impracticable as in extreme exhaustion, where a prolonged operation might be fatal.

The operation advocated by Dr. Murphy is undoubtedly the quickest and best hitherto suggested, and we shall certainly avail ourselves of it in those rare cases where cholecystotomy is not the better operation (see *Figs.* 14, 15).

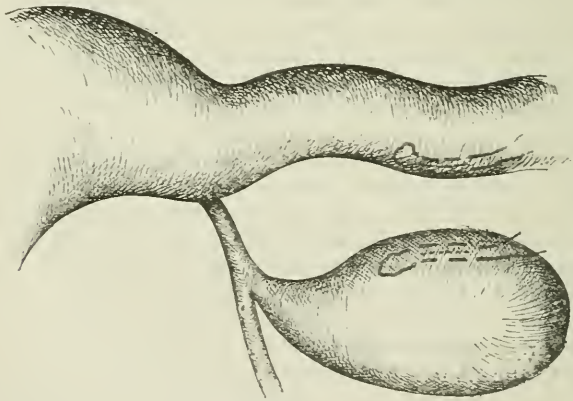

Fig. 14.—Running threads in position in gall bladder and duodenum.

Gangrenous Cholecystitis.—Lucius W. Hotchkiss[2] reports a case of gangrenous cholecystitis in a man, aged nineteen. Symptoms during life were those of acute peritonitis with tumour in right hypochondrium.

At the operation, the fundus of the gall bladder was found to be thin, friable, and gangrenous.

Death occurred seven hours after operation, and post-mortem the gall bladder was found much dilated and completely divided by a

thin septum, and contained about twenty gall stones facetted and about the size of a hazel nut; one of these occluded the cystic duct.

The walls of the neck and body of the gall bladder were thick and hypertrophied, while at the fundus gangrene had supervened; no perforation however existed.

The case is remarkable in that a condition of cholelithiasis, with such advanced hypertrophic changes in the walls of the gall bladder, as usually accompany a case of long standing, should be found in a boy of nineteen. The author can find no description of gangrenous

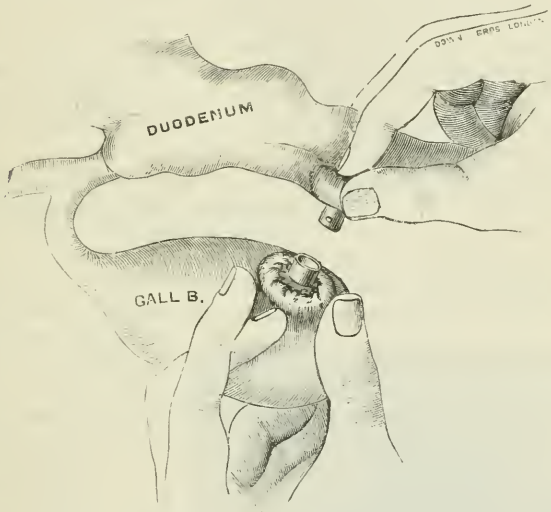

Fig. 15.—Showing method of holding parts while approximating button in cholecystenterostomy.

cholecystitis as a separate entity, and attributes the occurrence of gangrene in this case to the pressure of the enormous exudate within the walls of the gall bladder, and to a consequent stasis in the vessels.

Dr. Willy Meyer also mentioned a case of empyema of the gall bladder with abscesses in its inflamed walls.

Hourglass-shaped Gall Bladder.—Dr. Pilcher[3], at the New York Medical Society, showed a case of hourglass-shaped gall bladder; the upper and larger part was distended by a stone, the lower portion contained glairy flocculent fluid.

We operated lately on a case of this kind in which the upper cavity

contained several concretions completely shut out from the gall bladder proper, which also contained other stones and glairy mucus.

J. Mayer,[4] Karlsbad, as the result of experiments on dogs, concludes that an unhealthy condition of the mucous membrane forms a necessary antecedent to the formation of gall stones in the gall bladder.

We have on several occasions pointed out the ill effects of peritoneal adhesions, and in last year's "Annual" referred to a paper we gave on the subject at the Clinical Society. The subject has now received some attention, and we would especially refer to the record of a series of cases by Prof. Lennander,[5] in which the removal, by operation, of adhesions in the upper part of the abdomen, gave relief to intense pain and digestive disturbances; and to a paper by Mr. Bidwell,[6] in which he describes the removal of adhesions between the stomach and gall bladder as curing severe epigastric pain, although no gall stones were found.

We have recently operated on a case where such adhesions had caused a kink in the stomach, causing a vertical furrow from the lesser to the greater curvature which was completely eradicated on separation of adhesions between it and the gall bladder.

Acute Intestinal Obstruction due to Gall Stones.—In August of this year (1894) we removed successfully, by abdominal section, a large gall stone inpacted in the ileum of a lady, aged sixty, who had been obstructed for a week, and who had had fæcal vomiting for four days. The diagnosis was suspected, but the acute symptom rather resembled a volvulus or band than the real cause. The patient is now perfectly well.

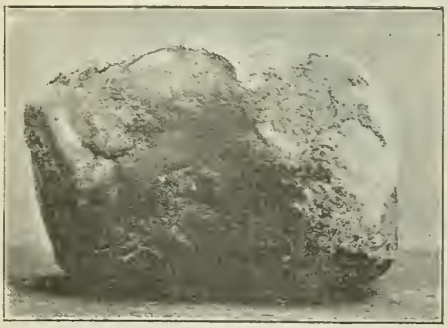

Fig. 16.—The gall stone: weight, 1¼ oz.; length, 2 in.; circumference, 4½ in.

Mr. Everley Taylor, of Scarborough, also had a successful operation, and as the concretion, in his case, was one of the largest, if not the largest on record, we append an illustration of it taken from a photograph (*Fig.* 16).

Mr. Arbuthnot Lane[7] records the successful removal of a large

gall stone which was impacted in the small intestine eight feet from the stomach.

Körte[8] also reports a successful case in which the concretion was removed from the bowel 25 c.m. above the ileo-cæcal valve.

We think this series of cases, together with others previously reported, goes far to do away with the arguments advanced by those who set their faces against operative interference, especially as in most of these cases it is impossible to be certain of the course until the abdomen is opened.

Rupture of Bile Duct due to Injury.—Mr. Battle[9] reports the case of a boy aged six months, who had been run over by a cab. At first there were no definite signs of visceral injury ; by the seventh day, however, he was deeply jaundiced with symptoms of acute peritonitis. Abdominal section was done on the eighth day, and a large quantity of almost pure bile evacuated, but no injury to the bile apparatus could be detected. He died on the ninth day, and post-mortem, the liver and gall bladder were found intact, but the common bile duct was found completely torn through. Mr. Battle considers this the first recorded case of such an accident.

Dr. George P. Biggs has reported a case of rupture of the cystic duct due to ulceration by a gall stone, with subsequent fatal peritonitis, the cause being found on post-mortem examination.

Papilloma of Bile Duct.—Dr. Rolleston[10] showed to the Pathological Society of London, microscopic sections of a growth removed by Mr. Bennett during cholecystotomy, from the common bile duct. Microscopically, it resembled a glandular polypus of the intestine. The papilloma was apparently the result of the irritation caused by an impacted gall stone.

REFERENCES.—[1] "Ann. of Surg.," June, 1894 ; [2] "Annals of Surg.," Feb. 1894 ; [3] Ibid., March, 1894 ; [4] "Virchow's Archiv.," 1894 ; [5] "Ann. of Surg.," June, 1894 ; [6] "Lancet," March 10, 1894 ; [7] Ibid., August, 1894 ; [8] "Brit. Med. Journ.," March 31, 1894 ; [9] "Lancet," April 7, 1894 ; [10] Ibid., May 19, 1894.

GERLIER'S DISEASE. *Allan McLane Hamilton, M.D., New York.*

Salzer[1] has recently given an account of the eye affection in this disease. The attacks began with a sharp pain in the back of the neck, extending downward ; there was confusion and cloudiness of vision and more or less complete paralysis of the upper lip with muscular weakness in the lower. The slight paresis passed off in about ten minutes but there was a tendency to recurrence, while some of the visual disturbance was permanent. Patients had a diminution of visual acuity for distance, and sometimes a failure of accommodation.

Hyperæmia, blurring of the edges of the disc, patches of choroido-retinal atrophy, contraction of the visual field, diminished field for colours and diplopia were observed, but in the interval between the attacks no defect in the arrangement of the ocular movements could be detected. It is believed that the changes in the optic nerve and retina and the symmetrical defects in the visual fields are explained by a cortical lesion affecting the visual centres.

REFERENCES.—[1] "Ann. d'Oculistique," Jan. 1894, reference in "Brit. Med. Journ.," March 17, 1894, "Amer. Med. and Sur. Bul.," July 1, 1894.

GLEET. *E. Hurry Fenwick, F.R.C.S.*

Staining Urethral Injections for Obstinate Gleet.—Mr. Hurry Fenwick[1] writes upon the advantage of combining dyes with urethral injections for obstinate gleet: "It will be admitted," he asserts "that by far the greater number of cases of gonorrhœa recover under the most ordinary of routine treatments; but it will be as readily conceded by most practitioners that a small proportion of gleets prove intractable, and drift from one hand to another. The morning discharge in these obstinate cases varies in significance. In the smaller number it is mere mucus—the secretion of the recently over-stimulated urethral glands. In the larger proportion, however, the thin gleety discharge emanates from definite patches of congestion, from granular erosions, or from tracts of inflammation which occur behind some stricture of large calibre. Such changes of surface may be seen in all parts of the entire canal, from the opening of the bladder to the meatus. These diseased patches shed off the shreds of muco-pus which are so often seen in the morning urine in the shape of white flakes, banners, or threads. It is difficult for those who do not employ the electric urethroscope to say whether these patches or granular erosions are situated in the penile urethra, and are therefore accessible and curable by ordinary urethral injections; or whether they are located in the membrano-prostatic sections, and are therefore beyond the reach and control of the injections which the patient is able himself to employ. The additions of dyes to the injection settles this point for us; for by such means the flakes or threads are dyed. For some years I have been in the habit of providing each hospital patient with a colouring injection, in order to save the time which is necessary for the examination of the deep or posterior urethra with the electric prostatoscope. The patient brings me the first part of the morning urine, and, if only coloured threads are visible in it, I know that the penile urethra is at fault, because in only about 6 per cent. can an injection, given without undue force, pass the opening of the membranous urethra. If only

white threads appear, I realise that foci of the disease are in the deep or posterior urethra, and I at once attack the membrano-prostatic sections of the canal. Generally there is a mixture of white and coloured threads, and this bears out the more advanced teaching concerning gleet, that the posterior urethra is, in a large majority of cases, affected as well as the anterior. The dyes I use most commonly are tr. catechu ♏viij ad ℥j. and the liquid extract of red gum ♏iv—♏x ad ℥j ; watery solution of methyl violet, 1 in 3,000, can also be employed. Of course, if time is not an object, the practitioner can wash out the penile urethra himself into one glass, and cause the patient to pass water into another (Goldenberg's[2] method). By this means he will be able at once to see whether the posterior section is involved as well as the anterior." It is only fair to say that Lohnstein[3] asserts that in ninety-four cases the deep urethra was reached in thirty-seven times by an ordinary injection, but Goldenberg refutes this.[4]

REFERENCES.—[1] "Brit. Med. Journ.," p. 12, part i, 1894 ; [2] Goldenberg, "New York Med. Record," 1888 ; [3] Lohnstein, "Deut. Med. Woch.," No. 44, 1893 ; [4] Goldenberg, "Centralblatt. fur Harn und sexual organ," Bd. v, Heft 7, 1894.

GONORRHŒA.

Synopsis.—(Vol. 1894, p. 305.) Injections of **Silver Nitrate**, 1 to 2000 or 4000 ; **Ammonium Sulph-ichthyolate**, 1 to 100 ; **Sublimate**, 1 to 30,000 or 1 to 20,000. Hutchinson uses first an injection of **Zinc Chloride**, 2 grs. to ℥j ; next, **Sandalwood Oil Capsules** ; lastly, a purgative night dose of **Epsom Salts** with **Bromide of Potassium**. Saalfeld treats painful erections with **Lupulin, Camphor, Monobromate of Camphor** and a combination of **Antipyrin** with **Bromide of Potassium** (15 grs. to 45 grs. respectively) ; local washing and injection of **Thallin Sulphate**, 1%, or weaker, four to six times daily, or **Zinc Sulpho-carbolate**, 2 or 3 parts to 1000 ; or a mixture of **Zinc Sulphate** $\frac{3}{10}$ of 1 part, **Acetate of Lead** $\frac{4}{10}$ of 1 part, **Distilled Water** 100 parts ; or **Zinc Sulphate, Carbolic Acid** and **Alum**, each ·2 or ·3, **Aq.** 100 parts ; or **Potassium Permanganate** ·3 to 100, or **Resorcin** 1 or 2 to 100, or **Solution of Tannin** ·5 to ·25 to 100 as injections. In addition **Salol, Oil of Santal, Copaiba** and **Cubebs** may be used internally. Glenn used : ℞ Zinc Chloride, gr. $\frac{1}{2}$; Zinc Iodide, gr. j ; Aq. ℥j, as an injection. Christian avoids injections and uses a capsule containing **Oil of Sandalwood**, 5 drops ; **Oil of Copaiba**, 5 drops ; **Oil of Cinnamon**, 1 drop ; 4 to 8 capsules daily. For "morning drop" an injection of **Zinc Sulpho-carbolate** and **Hydrastis** is useful. Infante uses fluid **Extract of Llareta**, giving 2 tablespoonfuls daily of 2% mixture of the extract in water. Jadasson employed **Ichthyol** for urethritis in women, and gonorrhœal cervical catarrh ; 10% ointment is used being weakened for application to the female urethra. Grivtzoff employs **Salol**, 1·5 grm., with a few drops of **Peppermint Oil** three or four times a day with **Cubebs** if desired, and for an injection : ℞ Salol, 10 grms ; Gummi Arab., 5·0 ; Aq. dest., 2000·0 ; M. Ft. Emuls. Inject three or four times a day. **Permanganate of Potash**, 1 to 4000 solution, injected through a rubber catheter

with lateral perforations. Carvallo uses: ℞ (1,) Sol. of Lysol (1%), 100 grms.; Sydenham's Laudanum, 3 grms; M. (2,) ℞ Sol. of Lysol (1%), 100 grms.; Cocaine Chlorhydrate, ·50 grm.; M. These injections are allowed to remain in the urethra four or five minutes, and are used three times daily.

GOUT.

Synopsis.—(Vol. 1894, p. 309.) Haig uses **Salicylate of Soda**, gr. 15, every three or four hours for intestinal gout.

HÆMATEMESIS.

Synopsis.—(Vol. 1894, p. 309.) If tongue is clean and little or no epigastric pain exists, Handford gives **Magnesia Sulphate** with **Sulphate of Iron, Sulphuric Acid, Nux Vomica**, and perhaps small doses of **Digitalis**. If gastric catarrh exists he gives an alkaline aperient of **Soda Bicarbonate** in full doses, **Soda Sulphate, Magnesia Sulphate** and **Nux Vomica**, omitting iron or giving it in pill.

HÆMATURIA.

Synopsis.—(Vol. 1894, p. 310,) Tuttle advises powdered **Cinnamon**.

HÆMOPTYSIS.

Synopsis.—(Vol. 1894, p. 312). In severe and stubborn cases, Eklund advises: ℞ Ext. Hamam. Virg. liq., Ext. Hydrast. Can. liq., āā ʒijss; Ext. Glycyrrhizæ, Aq. dest., āā ʒiijss—vij; M. *Sig.*—ʒij—ʒss h. alt. **Acetate** of Lead, gr. $3\frac{1}{3}$, twice daily, with **Morphia Acetate**, gr. $\frac{1}{10}$—$\frac{1}{8}$.

HÆMORRHAGE (Post Partum).

Synopsis.—(Vol. 1894, p. 313.) Tarnier employs the following injection before resorting to plugging: ℞ Iodine, 30 parts; Iodide of Potassium, 1 part; Distilled Water, 60 parts.

HÆMORRHOIDS.

Synopsis.—(Vol. 1894, p 315.) After a motion bathe with warm water and apply: ℞ Ung. Ox. Hydrarg. Rub., 1 part; Ung. Cetacei, 3 parts; M. Chrysarobin, gr. j; Coca-butter, gr. xxx; Iodoform, gr. ½; Belladonna Extract, gr. $\frac{1}{10}$. Ft. Suppositoriæ. ℞ Chrysarobin, gr. xiv; Iodoform, gr. v; Belladonna Extract, gr. x; Vaseline, ʒss; M. An antiseptic and soothing ointment. ℞ Iodide of Potassum, gr. xxx to lxxv; Powdered Iodine. gr. v; Glycerin ʒx; M. For external use. **Hot Sitz-bath** daily, and application of **Tampons** covered with the foregoing glycerole.

HAY FEVER. (See also "Fevers.")

Synopsis.—(Vol. 1894, p. 318.) Where the Schneiderian membrane is at fault application of **Galvano-cautery** is best, or use of **Chromic** or **Monochloracetic Acids**.

HEADACHE. *Allan McLane Hamilton, M.D., New York.*

Lauder Brunton[1] has expressed himself in regard to his experience with **Salicylate of Sodium** and **Potassium Bromide** in headaches beginning in the morning, and notes the extreme irritability at night which is the early precursor of the cephalgia which begins the following morning. Such disturbance is accompanied by drowsiness, disin-

clination to get up, and the complaint of frontal or temporal headache, which increases during the day until it becomes almost unbearable in the afternoon or evening, and disappears with sickness or nausea, leaving behind a certain amount of exhaustion. He recommends a mixture of bromide of potassium and salicylate of sodium to be taken the night before or early in the morning. The dose of the former is to be 35 grains, with 5 or 15 grains of the latter in half a tumblerful of water. The dose should be repeated if relief is not obtained.

Gradle[2] places great reliance upon the use of **Cannabis Indica** in migraine, and believes that one quarter to one third of all patients are permanently benefited by its use. He gives two or three doses at six hours' interval, continuing its use in moderate doses twice daily; and should the case be one where the pain is not immediately relieved he places great confidence in **Antipyrin.** He has little faith in any other remedy except chloral, which he believes to do good when it is possible to induce sleep. He also calls attention to the necessity of detecting optical defects.

Thomson,[3] of New York, has recently strongly recommended the use of **Ergot** in migraine, which for a long time has been successful in the hands of many therapeutists.

The connection of headache with diseases of the nose has again been illustrated by Snow,[4] who has relieved long standing and violent hemicrania by the removal of diseased turbinated bones and by the performance of other intra-nasal operations.

Verneuil[5] has written an extensive article upon headache, in which he insists that its pathology always consists in a very sensitive condition of the sympathetic nerves controlling the peripheral vessels of the cranium and brain, that is to say, in angio-neuroses. He believes that the seat of pain in headache is always in the dura and not in the cortex cerebri, and that it is produced by increased intra-cranial pressure.

REFERENCES.—[1] "The Practitioner," Feb. 1894, p. 104; [2] "Med. News," March 3, 1894; [3] "Med. Record," March 17, 1894; [4] "New York Med. Journ.," March 31, 1894; [5] "Revue Générale de Clinique et de Thérapeutique."

HEADACHE (Referred) and FACEACHE.

Head discusses the pain and tenderness produced by visceral disease on the surface of the head and neck. In a previous paper he had described similar phenomena at a lower level. He considers that the locality of pain is instructive only when the area of tenderness, with which it is usually associated is known. In determining the areas of any particular organ of the head the method adopted

was (1,) To exclude all pain and tenderness in the thorax and abdomen ; (2,) To note the presence or absence of general states, for example, anæmia ; (3,) To exclude disturbances of other organs than the one under investigation ; (4,) To note the effect of treatment directed to remove the initial visceral lesion. Converse precautions were taken when determining the relation of pain and tenderness in the head and neck to disturbances of thoracic and abdominal organs. The author seeks to establish that each organ in the head—nose, eye, ear, teeth, tongue, salivary and other glands, tonsils, larynx, and the brain itself—stands in relation to one or more areas on the surface to which pain is referred, and over which the skin may become tender. Herpetic eruptions correspond fairly with the areas of tenderness, but more often several areas are involved. These areas do not as a rule overlap, and this is especially true of the head, less true of the neck. The accompanying table shows the points of maximum tenderness and pain in the several areas. The head areas to which viscera refer pain (in association with referred pain in parts of the trunk) are briefly as follows :—Lung : fronto-nasal, mid-orbital, fronto-temporal and temporal. Heart : mid-orbital, fronto-temporal and temporal. Stomach : fronto-nasal, vertical, temporal, parietal. Liver : fronto-nasal, vertical, occipital. Upper part of small intestine : vertical and parietal. Intestine also to occipital. Ovaries or testes : occipital.

Area.	Maximum Point.	Reference From :
Fronto-nasal ..	Over orbital ridge, ½ in. from middle line	Cornea and anterior chamber, upper nose, upper incisors
Mid-orbital ..	(1) Eyelid just below centre of eyebrow. (2) Front of hairy scalp	Hypermetropia, hypermetropic astigmatism (accommodation spasm)
Fronto-temporal	Behind fronto-nasal and ½ inch above orbital ridge	Iritis, glaucoma, thoracic viscera
Temporal ..	In temporal fossa, just above upper border of zygoma	Glaucoma, second upper bicuspid, upper gastric area of chest (vomiting)
Vertical ..	Vertically above ear	Posterior part of eye, increased tension of middle ear, hepatic and gastric disturbances
Parietal ..	Parietal eminence	Ear (with other areas), Stomach

Occipital ..	Just above occipital protuberance	Abdomen, back of tongue (rarely)
Maxillary ..	Under eye	Bicuspids and hard palate, Iritis and + T
Mandibular ..	In front of tragus	Last two upper molars
Hyoid.. ..	(1) Behind and below angle of lower jaw. (2) In external auditory meatus	Ears, tonsils, tongue, teeth, (lower molars)
Superior laryngeal.. ..	In front of sterno-mastoid at level of pomum Adami	Lower wisdom teeth, back of tongue
Inferior laryngeal.. ..	In front of sterno-mastoid at level of cricoid	Larynx (vocal cords and below)
Naso-labial	Between angle of nose and angle of mouth	Respiratory part of the nose, upper canine and first bicuspid
Mental ..	Over lower jaw, below angle of mouth	Anterior part of tongue, lower incisors, canine, and first bicuspid
Sterno-mastoid	(1) Posterior edge of insertion of sterno-mastoid into skull (2) Supraclavicular fossa	Thoracic organs
Sterno-nuchal	Over the shoulder-joint	Thoracic and abdominal disturbances

REFERENCE.—"Brain," 1894.

Synopsis.—(Vol. 1894, p. 318.) Peterson advocates a running water **Cold Foot Bath** every evening, accompanied by **Rubbing** and **Chafing** the feet, or a strong **Fan Douche of Cold Water.**

HEART (Diseases of the).

Dr. Haynes[1] gives the following relations of the normal heart and lungs to the anterior chest wall.

(1,) *Base of Heart*: A line crossing the sternum obliquely from the upper margin of the third right to the lower border of the second left costal cartilage, an inch and a half from the median line on each side.

(2,) *Apex*: In the fifth space near the upper margin of the sixth costal cartilage, two inches and a half to the left of the median line.

(3,) *Right Border*: From the right end of the base curved slightly outward to reach a point an inch and three quarters from the right of the middle line over the fourth cartilage and ends at the centre of the fifth cartilage an inch from the mid-sternal line.

(4,) *Left Border*: From the left end of the base with a convexity outward to the apex. It reaches its greatest distance (three inches) from the sternal centre over the fourth space.

(5,) *Lower Border*: A line curved downward at its beginning (at the lower extremity of the right border) and ending at the apex, and slightly convex upward in its centre as it crosses the middle of the ensiform.

(6,) *Heart Dulness*: A *quadrilateral* area to the left of the median line and below the upper border of the fifth cartilage, nearly two inches in vertical and an inch and a half in extreme lateral measurements.

(7,) *Auricles*. Right: "Ear-shaped," facing to the left, covering the first inch of the third right space and cartilage with the portion of the sternum adjacent to the latter. Its long axis measures about two inches and is inclined from above downward and outward. Left: Is a small oval space half an inch by an inch, its centre an inch and a quarter to the left of the median line behind the second left space and third cartilage. Its long axis is directed from above downward and outward.

(8,) *Auriculo-ventricular Groove*: Is indicated by a line from the right to the left heart border, beginning on a level with the upper margin of the fourth right and ending on a level with the lower edge of the third left cartilage. This line is convex upward and crosses the middle of the sternum on a level with the lower border of the third cartilages.

(9,) *Aorta*: A little more than an inch wide and about two inches long. Extends from the upper border of the third to behind the middle of the first cartilages. At its beginning and ending its centre is behind the median line, but in the middle of its course the artery is convex toward the right.

(10,) *Pulmonary Artery*: Begins on a level with the lower border of the third and ends behind the middle of the second left cartilages. Below its centre is half an inch and above three quarters of an inch to the left of the median line.

(11,) *Coronary Arteries*: Both are nearly vertical; they incline slightly toward the median line at their lower ends. Right, an inch from the mid-sternal line. Extends from the upper border of the fourth to the lower border of the sixth cartilage. Left, an inch and three eights from the middle line in expansion, and three quarters of an inch in contraction of the heart, extends from the middle of the third to the lower border of the sixth cartilage.

(12,) *The Anterior Margins of the Lungs in Inspiration*: Right lies to the left of the median line, a quarter of an inch from and parallel with it from the upper margin of the second to that

of the sixth cartilage (sternal ends). The left is in contact with the right from the upper border of the second to the mid-point between the fourth cartilages, where it turns downward and outward along the upper margin of the fifth left cartilage. Length of contact, two inches and a half.

Jackson[2] points out that errors in the diagnosis of cardiac diseases may arise as follows: (1,) A murmur may be evanescent even in the presence of a well marked valvular lesion as well as in mere functional derangements; (2,) A murmur may be audible to the ear when applied to the chest, but not through the stethoscope, and this characteristic applies most frequently to the bruit of aortic regurgitation; (3,) Murmurs do not always confine themselves to their regular areas, *e.g.*, an aortic regurgitant murmur may be heard at the apex only; (4,) Estimating the size of the heart. Variations in the position of the apex beat are frequent under normal conditions, and on the other hand marked valvular disease may exist without enlargement of the cardiac area or sign of displacement; (5.) Some cases regarded as functional palpitation are undoubtedly due to adherent pericardium; (6,) The secondary congestions, *e.g.*, gastric and hepatic, may overshadow the cardiac lesion, especially in cases of acute dilatation without endocarditis. In aortic atheroma also the gastric symptoms may entirely divert attention from the graver lesion. A small aneurism of the first part of the aortic, producing cough and asthma by pressure on a bronchus, may easily lead to diagnosis of lung disease as the primary factor; (7,) The presence of acute lung or general diseases may mask so grave a lesion as malignant endocarditis, especially if the purpuric eruption and any murmur are absent.

Pulmonary Regurgitation.—According to Gerhardt[3] the signs of the affection are as follows: The impulse is too powerful, and is perceived over too large an area, being especially marked to the right of the usual position of the impulse. The heart dulness is increased, this increase being caused by hypertrophy and dilatation of the right chambers of the heart. A diastolic murmur is heard, loudest over the origin of the pulmonary artery, and conducted downwards to the apex, and is not conducted along the great arteries into the neck. The second sound is sometimes present, sometimes lost; frequently a systolic murmur co-existed, showing stenosis as well as regurgitation. In addition to these physical signs, Gerhardt noticed two others to which attention does not seem to have been called. In five cases he

noticed that over every part of the lungs, especially over those parts most remote from the heart he heard two dull sounds, something like murmurs. This he calls double sound in the branches of the pulmonary artery. A second sign, which may be called audible capillary pulse in the pulmonary circulation, is thus described: in parts of the chest at some distance from the heart (*e.g.*, at the outer border of the right shoulder blade), when the patient draws a long, deep breath, the vesicular respiratory murmur grows louder with each systole of the heart, and then becomes more feeble.

Pericarditis.—In opposition to the almost universally accepted teaching that commencing pericarditis is first manifested by an increase (broadening) of the cardiac dulness at the base of the heart, Ebstein[4] finds that the first alteration occurs in the lower regions of the area of dulness. At first there is a stretching of the pericardium towards the left side, but this is seldom discoverable, partly on account of the occurrence simultaneously of left pleurisy, partly on account of the overlying of the cardiac apex by the lung, partly on account of the loud tympanitic note in the semilunar space. After a short time the pericardial sac will be distended towards the right side also; and this enlargement may be recognized clinically in nearly every case by the appearance of an absolute, or almost absolute, dulness in the fifth right intercostal space, in the region named by Ebstein the cardio-hepatic angle (*Herzleberwinkel*). The symptom is all the more demonstrable if it occurs under the observation of the physician, because the possibility of mistaking it for the other processes which bring about complete dulness in this region is entirely excluded. Further, this absolute dulness in the cardio-hepatic angle is of importance for the differential diagnosis between pure hypertrophy of the heart and accumulation of the fluid in the pericardium, because, according to Ebstein, so far as has been hitherto ascertained, absolute heart dulness between the fifth and sixth ribs, even in extreme hypertrophy of the right heart, does not extend beyond the right sternal margin. The cardio-hepatic angle marks also the spot at which during the retrogression of pericardial effusions, the dulness remains longest observable.

Cardiac Asthenia.—Da Costa[5] applies this term to those cases in which there is habitual feeble action of the heart, and in which this constitutes the essential and only appreciable disorder.

This heart-feebleness or heart exhaustion comes from two causes:

it is due either to nervous failure or to a weak heart muscle; in some instances to a combination of both.

The affection generally manifests itself in those whose nervous system has been strained by worry or by overwork. It shows itself frequently by a veritable and sudden cardiac collapse, though the causes that have led to this become apparent enough when enquired into, and there have been warning signs. The patient is obliged to stay in bed; all attempts at sitting up produce a sense of swooning and a vanishing pulse, or there is actual fainting from time to time. The heart's action is feeble, the pulse very small and compressible, and generally increased in frequency; there is a sense of uneasiness in the cardiac region, but very rarely actual pain; the extremities and the nose and ears are cold; the general temperature is somewhat below the norm. The capillary circulation is poor, the skin pale, occasionally injected or flushed; sweating is the exception. The breathing is conspicuously unaltered, although there may be a sense of oppression. "I am out of heart rather than out of breath," was the expression of a very observant patient, who added: "The heart has taken possession of the whole chest." The reflexes are unimpaired or sluggish. The appetite is poor, though there are no marked gastric symptoms; the bowels are constipated. Insomnia may be complained of; apprehension and low spirits are very common. From this state of depression and disturbed circulation the patient rallies but slowly. It is one or two months before he can sit up without inclination to faintness, and months more before he recovers. The course of the disease is as markedly chronic as the onset has been markedly rapid.

The heart's action is mostly accelerated, but not irregular. It is very variable, always rises markedly after meals, and is influenced by the slightest exertion. Slow pulses (pulses under 60) are, quite the exception. The pulse is feeble, very compressible, at times almost imperceptible. The heart's action is influenced by position, but not to the extent to which the irritable heart is influenced.

The physical signs of the heart disorder are very significant. There is no increased percussion dulness, the impulse is feeble, difficult to find, not diffuse. The first sound is short, lacking in volume, and may be obscure or short and valvular; the second is not accentuated. Excluding anæmic murmurs, which are very infrequent, since anæmia does not play an important part in the affection, there may be, though this is also rare, functional apex

murmurs of dynamic origin, and these murmurs may be brought out, as shown by Dr. John K. Mitchell, ("Transactions of the College of Physicians of Philadelphia," 1892), by suddenly closing the hand tightly. A sensitiveness to touch in the cardiac region is at times noticed.

That the nervous system is very decidedly affected is evident. Indeed, most cases happen in those who from overwork or worry have had their nervous tone markedly lowered. The breakdown is primarily in the nervous system and not in the heart. The cardiac malady is throughout neurosal rather than muscular. It is very difficult to say to what part of the nervous system influencing the heart the disorder should be ascribed. Granting that the central nervous system is affected, Da Costa is inclined to attribute the cardiac weakness more immediately to disturbances in the cardiac ganglia than in the centres in the medulla and to the disordered inhibitory influence of the vagus. The changed respiration seems to be against the view of the centres in the medulla being decidedly affected, as the centres for the heart and the respiration are there so closely connected. The malady is not hysterical, as in the great majority of cases hysterical symptoms are conspicuously absent, but they may come on when the case is of long duration.

The disease is one of all ages except childhood and very old age. The great majority of cases have been in men. It is always a long drawn out affection.

The diagnosis is not, as a rule, difficult. The evident nature of the causes that have given rise to the heart-wreck, its generally sudden onset, the unembarrassed breathing, the feebleness of the pulse and of the cardiac impulse, are full of significance. The physical signs as well as the state of the respiration and the clinical history separate the weak asthenic heart from the weak heart of organic type, such as the typical ones of this group—fatty degeneration and cardiac dilatation.

From other members of the functional group, as from the irritable heart, it is also distinguished by the history, by the fact that in this malady the patient has had a heart-strain or a gastric or an intestinal affection, that he is able to be about, that the heart's action is generally much more rapid, much more influenced by change of posture, that the impulse is sharp, jerky, diffuse, the pulse quick, small, not so faint, the second cardiac sound sharp and distinct. The tobacco heart resembles the asthenic heart very closely.

The most difficult point in diagnosis is to distinguish the weak

heart of nervous origin from those much rarer cases of inherent muscular weakness in which, however, no obvious disease of the muscle exists. It is very much rarer than the nervous form, and very much more persistent. The symptoms are the same as regards the feeble circulation, but there is this decided difference: shortness of breath, especially on exertion, is very common, and œdema of the ankles and insteps, passing though it be, is often met with. The physical signs in the heart do not differ, except that the first sign is more toneless, undefined, not so valvular; reduplication of either sound is more usual, and also functional dynamic apex murmurs. Dilatation of the heart and mitral insufficiency may finally come on in these cases which may thus become markedly organic. In the asthenic nervous heart the prognosis is good (though there is some danger from heart failure); it thus contrasts most favourably with cases of cardiac muscular debility.

TREATMENT.—For the cases of asthenic nervous heart, rest in bed is at first essential, and, when they are able to sit up, nothing does them so much good as graduated **Shower-baths.** **Massage**, too, may be employed, but many cannot at first bear it, and it comes in better at a later stage of the treatment. It is then, too, that **Swedish Movements** may be recommended, and carefully adjusted exercise, such as walking, or gentle horse-back exercise, or light gymnastics. These agents can be resorted to from the start, where the weak heart depends on a weak heart-muscle. From Swedish movements that are specially adapted to promote the flow of blood and to strengthen the heart, Da Costa has seen in this class of cases great good. The action of the heart has become distinctly stronger and more regular, and in young persons he believes a permanent curative result may be accomplished. The food should always be as nutritious as possible, taken as frequently and in amount as large as the digestion will readily tolerate, and stimulants often have to be resorted to. It is astonishing in what quantities they are borne, and temporarily even required, in the nervous heart; though, for fear of forming a habit, it is best to withdraw them as soon as the circulation strengthens. The tendency to constipation demands attention, and is to be remedied by means of diet and of light laxatives.

Among drugs **Strychnine** stands pre-ëminent. It is suitable to both the forms of weak heart under discussion. The dose need not be large—rarely exceeding $\frac{1}{30}$ of a grain three times daily—but it must be continuous. Iron is not called for except where

a complication with anæmia exists, or later in the case as a general tonic, and its tendency to constipate makes it often a doubtful remedy. **Arsenic**, for the nervous asthenic heart, comes next to strychnine in value. Its action cannot be explained by its removing anæmia, for it proves to be valuable where the blood-count shows that anæmia does not exist.

Of so-called heart tonics **Digitalis** is the best, but it is not the certain remedy we might suppose. It is on the whole best adapted to the cases of muscle weakness. Where we give it in large doses the patient should be kept in bed. In a number of instances it does not suit at all. **Strophanthus** is generally said to be inferior to digitalis. Da Costa has used most of the other remedies of this class in different cases. **Adonidin** and **Chloride of Barium** have done him at times good service; cactus and convallaria have been disappointing. The latter he has ceased to use. **Caffeine** and **Cocaine** are both valuable, but their action cannot be kept up; from cocaine one would run the risk of establishing the cocaine habit. It is, however, very serviceable during urgent symptoms of failing heart. **Nitro-glycerine** is not of much avail, except there be cardiac pain, unless combined with remedies like digitalis, which act more distinctly on the force of the heart. **Bromides, Valerian,** and **Opium** ought to be left to meet special indications of nervous disturbance.

Glinski[6] summarises his experience of **Apocynum Cannabinum** in the following conclusions: (1,) The action of the root of apocynum cannabinum is similar to that of digitalis, without being cumulative; (2,) In cases of dilatation the fluid extract rapidly diminishes the area of dulness; (3,) It increases the daily amount of urine, stops the palpitation, and promotes the absorption of transudations; (4,) With the exception of increased pulsation of the arteries of the head, it has no bad secondary effects. It was used either in the form of a decoction (℥j to ℥viij), 3 to 4 tablespoonfuls a day, or tincture (1 in 10), 5 to 10 ♏, three to four times daily, or fluid extracts in doses of 10 ♏ to half a teaspoonful three times daily.

In an able paper on the treatment of mitral stenosis Dr. James Barr[7] strongly advocates the use of **Atropine** combined with **Nitro-glycerine**, as follows:—

℞ Liq. Atrop. Sulph. ♏vj | Aq. ad ℥jss
Liq. Trinitrini ♏vj |

M. Ft. mist. Sig. ℥j to be taken three or four times a day.

Babcock[8] gives an account of the **Schott Method** employed at Bad Nauheim during the past twenty years in the treatment of all forms

of chronic heart disease, except aneurism of the heart, or large vessels, and advanced general arteriosclerosis. Valvular disease forms no contra-indication to its employment, for most striking restoration of compensation has been obtained in cases of the utmost gravity that had resisted all other forms of treatment.

The method consists in the administration of warm baths, either simple saline, or saline with a large percentage of carbonic acid, at a temperature varying from 86° to 92° F. The duration of the bath is from five to twenty-five minutes, being short at first and gradually lengthened. The simple saline baths at the higher temperature are first employed, and they are subsequently gradually and cautiously strengthened by the addition of a strong solution of the salts, and the temperature is gradually reduced. The baths are taken once every second day or daily for three days in succession, with one day's interval following. After the bath the patient remains undressed and lies down, warmly covered, for at least an hour. The treatment extends over a period of from five to seven weeks.

Another factor in the method is the employment of extremely simple but systematic exercises of the trunk and limbs. A fundamental principle of the gymnastics is that the patient's movements are restricted by another person. The exercises consist of flexion, extension, and rotation movements. A movement should never be immediately repeated, but followed by a short period of repose. It should not be made so rapidly or against such a degree of resistance as to cause acceleration of the pulse or respiration. All movements must be carried out slowly and steadily, without jerkiness. In some cases the patient resists his own movements by calling into play antagonistic muscles.

During the baths there is a slowing of the pulse with increased volume and strength, and irregularity, if any exist, is lessened or disappears. The cardiac contractions are increased in vigour and the cavities better emptied, thus permitting of a diminution in the size of a dilated heart. This marked and beneficial effect on the action of the heart does not disappear at once, but persists for a considerable time subsequent to the baths. If properly administered, the baths occasion a gradual and perceptible amelioration of the symptoms. During the gymnastics the rate of the pulse falls and the volume and strength are increased.

While Oertel's method is limited to cases of heart disease in which compensation has not been lost, Schott's method is applicable to a greater variety of cases, and, as the treatment can be carried out in this country by artificially prepared baths and the gymnastics, it seems

that by careful selection patients subjected to this treatment may be greatly benefited.

REFERENCES.—[1] "New York Med. Journ.," Sept. 12, 1893; [2]Ibid, April 28, 1894; [3]"Charite Annalen," xvii., p. 255; [4]"Practitioner," Feb., 1894; [5] Da Costa, "Amer. Journ. Med. Sciences."; [6]"Vratch," Nos. 6 and 7, 1894; [7]"Liverpool Med. Chir. Journ.," January, 1894; [8]"New York Med. Journ.," Nov. 18, 1893.

Synopsis.—(Vol 1894, p. 326.) **Theobromine** as diuretic, gr. 30 daily (the pure drug, not diuretin). **Diuretin** 45 to 90 grs. daily. **Morphine** in some cases relieves the dyspnœa and nervous symptoms. **Caffeine** may be used with **Morphine** or to replace it. Injection of **Morphine** and **Ether** for severe cardiac dyspnœa, the former in $\frac{1}{20}$ to $\frac{1}{15}$ gr. doses. **Piscidia Erythrina**, 20 drops morning and evening for painful sensations of chronic myocarditis or endarteritis. **Coronilla Tincture**, 1 to 5, giving ʒss—j daily used for tachycardia, dyspepsia, vertigo and other reflex disturbances.

HEAT STROKE.

Synopsis.—(Vol. 1894, p. 329.) **Rubefacients**, *e.g.*, rubbing skin with large gritty sponges; **Atropine**, $\frac{1}{60}$ to $\frac{1}{30}$ gr., the latter in two equal doses with brief interval. **Sp. Ammon. Aromat.**, ʒss to 1 in milk. **Morphine**, gr. $\frac{1}{4}$, may be used with the atropine or the ammonia. **Strychnine**; **Ice** for the nausea. **Amyl Nitrite** (♏ 3), inhaled, gave good results in one case. **Cold Spray, Cold Air Blast.**

HERNIA. *A. W. Mayo Robson, F.R.C.S.*

In the radical cure of inguinal hernia we have found that a combination of the various modifications of the original operation of Mitchell Banks has given the most satisfactory results, both immediate and remote. After separating the sac from its environment we lay open the inguinal canal in its entire length, so as to thoroughly expose the neck, which is then isolated, ligatured as high as possible, and cut through just below the ligature, the ends of which are left long; these ends are then threaded on curved needles, which being guided by the index finger are passed through the internal abdominal ring and made to pierce the fascial, muscular and aponeurotic layers, about half-an-inch or more above the upper border of the ring. The two threads being passed about a quarter of an inch from one another are drawn tight, tied, and cut off short on the superficial surface of the aponeurosis of the external oblique, thus drawing the cut neck of the

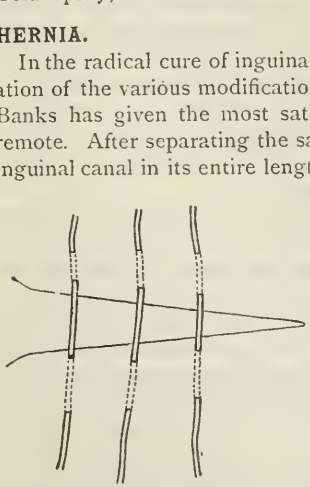

Fig. 17.—Suture applied.

sac away from the opening through which it previously passed. In the male, the vas deferens with its artery and a single vein. "all redundant veins having been removed," is then brought through the outer part of the inguinal canal, as in Halstead's operation, and made to run superficially towards the scrotum, the canal being occluded by buried sutures; and when the aponeurotic layer is redundant, the method described by Graff[1] (*Figs.* 17, 18, and 19) is adopted, as it results in the apposition of broad fibrous surfaces, which strengthen the line of union.

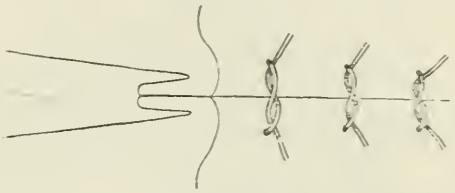

Fig. 18.—Suture tied.

The skin and subcutaneous tissues are then brought together by silk-worm gut sutures, and unless the scrotum has been much interfered with, no drainage tube is employed. As a rule healing occurs by first intention, and the sutures are removed at the end of a week, but the patient is kept recumbent for three weeks, and wears a pad of wool held in position by a spica bandage for about three weeks longer. No truss is ordered. The operation can be quickly performed, and the after results are most satisfactory.

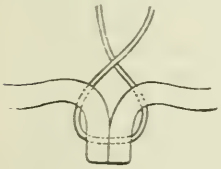

Fig. 19.—Apposition obtained.

Wirt[2] recommends, after the radical cure has been performed on children, that the antiseptic dressing be covered by a plaster of Paris case from the ankle to the umbilicus.

Bruns[3] describes an operation for the radical cure of umbilical hernia devised by Condamin as a modification and extension of Keen's method.

A curved incision is commenced in the mid-line, just above the hernia, and carried along the base of the tumour on the right side as far as a corresponding point in the middle line below. This incision involves the whole thickness of the abdominal wall, including the peritoneum. On raising the inner edge of this wound the inner opening of the hernial sac is exposed. The neck of the sac is now incised, and a short transverse incision made from the middle of the outer edge of the long wound. The contents of the sac can now be returned into the abdomen. A curved incision similar to the first is now made, and the sac with its coverings and the soft parts round the hernial ring removed. The edges of the abdominal wound are now

approximated by two rows of sutures, one including the peritoneum and deeper layers of the abdominal wall, the other and superficial row including the edges of the skin.

The advantages claimed for the operation are the greater ease of returning the contents of the sac, the greater certainty of securing a primary healing of the wound, and the diminishing the tendency to relapse.

Dr. George M. Edebohls[4] also describes an operation for radical cure of umbilical hernia. Briefly, it consists in splitting back a flap on each side of the hernial opening and bringing the surfaces together by means of silkworm-gut suture, in such a manner that the surfaces are apposed without puckering them together as had previously been done. These sutures are buried and permanent. He reports four cases of the above operation, three of which were successful, one relapsing in twelve months.

Hernia in the Linea Alba.—Lenhoff[5] describes a thrill to be obtained in these epigastric herniæ similar to the hydatid thrill, and draws attention to the fact that the symptoms of catarrh of the stomach and gastric dilatation may be simulated.

Elliot Smith[6] reports the case of a detached and dead hydatid cyst found in the patent processus vaginalis of a man aged eighty-five. The cyst had apparently become detached from its original site, and had passed into the hernial sac. According to the author, only one other case in which a hydatid cyst formed the contents of a hernial sac has been recorded. He draws attention to the fact, that cases in which cysts lie free in the peritoneal cavity are very uncommon. These cysts probably always develop in the subserous tissues of some abdominal viscus, or in the omentum; and later separate themselves from the surface of organ in which they were embedded, and becoming detached lie free in the peritonial cavity.

Ventral Hernia following Laparotomy.[7]—At a meeting of the Royal Academy of Medicine, in Ireland, Mr. McArdle brought forward some cases to show that the middle stratum of the abdominal wall was the essential one to secure in completing operations for ventral hernia, or after laparotomy. He enumerated the following as the usual causes of non-union in this layer: (1,) Failure to engage the different layers of this stratum sufficiently in the sutures; (2,) Interposition of contused peritoneum; (3,) Hæmatoma not becoming soundly organised; (4,) Suppuration from inherent or extrinsic causes.

We entirely agree with the author of the paper on the importance of securing apposition of the separate layers, especially the aponeu-

rotic, and since we have used a continuous suture for the peritoneum and separate sutures for the aponeurosis, and for the superficial structures, we have not been troubled with subsequent ventral hernia after abdominal operations.

At a meeting of the Clinical Society, of London, Mr. Parker[8] related a case of strangulated femoral hernia, complicated by volvulus. The strangulated gut was gangrenous, and a false anus was established, but no fæces escaped. Sixteen hours later laparotomy was done and a volvulus discovered and adjusted, immediately after which fæces began to flow from the false anus. Unfortunately the patient died in about twelve hours ; but the case is a most instructive one, and worth remembering in all cases where relief is not obtained after kelotomy.

Chaput[9] recommends that in cases of gangrenous hernia, intestinal suture should be performed instead of making an artificial anus, although he acknowledges that an artificial anus should be formed when there is much collapse or apparent peritonitis.

In doubtful cases, when an entire loop of gut is involved, Richelot's operation of kelotomy without reduction should be adopted, and if the patient's state admits, reduction should be performed forty-eight hours afterwards. If there is a perforation this part should be buried by a double row of sero-serous sutures, and the intestine so placed that it can be observed for forty-eight hours.

When the presence of gangrene is evident, and the lesion is small, it is enclosed in the intestine by a double row of sero-serous sutures, and, if long, it is enclosed by a fold of intestine held by sutures.

When it is wide but does not involve the whole circumference of the bowel, Chaput advises that a diamond-shaped piece, which includes the gangrenous portion, should be cut out, and the margins of the orifice so formed should be united by sutures. By this method, he maintains, a sufficient channel of communication between the two ends of the intestine is left.

Dr. McCosh[10] in reporting three successful cases of gangrenous hernia subjected to circular enterorrhaphy says : "In reporting a case a few years ago, I collected one hundred and fifteen cases of immediate enterorrhaphy, and found the mortality to be about 50 per cent. In spite of this large death rate, my own preference in the majority of cases is for immediate suture, instead of the formation of a temporary artificial anus.

Mr. W. H. Page[11] in discussing the question of resection of the intestine for gangrenous hernia says each case must be judged as it occurs, and that when neither local nor general conditions seem to

forbid it, primary resection should be done. Mr. Page recommends that this procedure be carried out at the site of the original wound, rather than by making a fresh incision in the middle line.

We have previously expressed our views on this subject, which are in accord with those of Mr. Page quoted above, and we think that the length of time involved in enterectomy in these cases is much exaggerated by many surgeons, and that therefore unless the patient is in a very unfavourable condition the gangrenous parts should be excised and the bowel united *in loco.*

During a discussion on the treatment of strangulated hernia at a meeting of the Philadelphia Academy of Surgery, Dr John Ashhurst, Jun.,[12] said that in the hands of an inexperienced practitioner, who sees but few cases of hernia, taxis is an unsafe procedure.

Dr. John Deaner considers anastomosis operations to be of value in but few cases of strangulated hernia. In gangrenous hernia the condition of the patient does not warrant the procedure of anastomosis, and even under the most favourable circumstances the operation is anything but satisfactory.

Dr. J. M. Barton said, in cases of umbilical hernia the strangulated bowel is invariably in the centre of a mass of omentum. The small knuckle of intestine is at the very base, and any pressure on the surface would be useless.

In two cases he had successfully released the strangulated bowel by grasping the abdomen above and below the hernia, and lifting the abdominal walls—actually lifting the patient off the bed.

Mr. George Wherry[13] draws attention to the value of coughing on the part of the patient during the performance of taxis. He advises that, during the whole of the time that taxis is being employed, the patient should cough, only stopping for rest or on account of retching. In explanation, he says that the alternate contractions and relaxations of the boundaries of the ring are most favourable for the return of a hernia if pressure be skilfully practised.

Raiford[14] recommends the cold douche and taxis in strangulated hernia, and claims that 90 per cent. of cases so treated can be reduced in a few minutes and without the aid of anæsthesia.

Demons and Binaud[15] report a case of omphalo-properitoneal hernia *(hernie à double sac)*, it being, he says, the fourth on record. The patient, a woman aged sixty-two, presented herself at the hospital Saint-André, suffering from strangulated umbilical hernia.

Laparotomy was done, when the umbilical sac proper was found to contain a loop of strangulated gut and omentum, and communicating with this sac was a second, six centimètres long, lying below the umbili-

cal ring and situated between the peritoneum and the abdominal wall. This sac contained omentum. The two sacs were dissected out and the patient recovered.

Vesical Hernia.—Dr. Ernest Michels,[15] in a paper communicated by Mr. R. W. Parker to the Royal Medical and Chirurgical Society describes a case of extra-peritoneal vesical hernia ; the contained viscus being mistaken for an empty hernial sac was ligatured at the neck and excised. Twenty-four hours after operation the patient complained of great hypogastric pain, and the urine contained a large admixture of blood.

The abdomen was opened and the extra-peritoneal bladder wound closed by a double row of sutures. The patient recovered.

In the discussion which followed Mr. Macready and Mr. Keetley each cited similar cases, in that the presence of the bladder was unsuspected, and although wounded during operation, recovery had followed.

Dr. F. A. Pinnell[17] reports a case of bladder in an inguinal hernial sac, and that, when operating, the bladder was cut into under the impression that it was omentum.

At a subsequent operation the protruding portion was sliced off, and the wound in the bladder sutured by Halstead's method, the patient recovering.

In a recent treatise on hernia (a Treatise on Ruptures, by J. F. C. H. Macready) we find the published cases of vesical hernia grouped as follows : Out of a total of thirty-six, twenty-six were scrotal, four labial, two femoral, one vaginal, one perineal, one ischiatic, and one ventral.

The irritation of the bladder caused by the nipping of the neck of the protrusion, the collection of urine in the saccule outside, and the tendency to inflammation and calculous deposit, which decomposition of the products is very likely to produce, all complicate the case.

Mr. Rose recommends reduction of the vesical protrusion without excision of any part, as excision is apt to be followed by giving way of the stitches, sloughing of the wound, and the formation of calculi with the sutures as their nuclei.

REFERENCES.— [1] "Ann. of Surg.," May, 1894 ; [2] "Internat. Med. Mag.," February, 1894 ; [3] "Centralblatt. f. Chir.," No. 1, 1894 ; [4] "New York Med. Journ.," Jan. 13, 1894 ; [5] "Berlin. klin. Woch," July 30, 1894 ; [6] "Australian Med. Gaz.," July 15, 1894 ; [7] "Lancet," Jan. 27, 1894 , Ibid., April 21, 1894 ; [9] "Sem. Méd.," March 21, 1894 ; [10] "Ann. of Surg.," June, 1894 ; [11] "Lancet," Jan. 13, 1894 ; [12] "Ann. of Surg.," Aug., 1894 ; [13] "Lancet," July 27, 1894 ; [14] "Amer. Med. & Surg. Bulletin.' [15] "Archives provinciale de Chir.," Tome ii., No. 12. ; [16] "Lancet,' April 28, 1894 ; [17] "Ibid., May 5, 1894.

HERPES.

Synopsis.—(Vol. 1894, p. 336.) Washing with 1% **Carbolic Solution** for herpes genitalium, and dusting with: ℞ Amylum Pulv., 100 parts; Tannin, 5 parts; Bismuth Salicylate, 1 part. For herpes ophthalmicus cleanse with **Boric Acid Solution**, and dust with: ℞ Powdered Starch, Bismuth Subuit., āā ℥j; Iodol or Aristol, gr. 7½; M. **Arsenic** administered for a lengthened period.

HICCOUGH.

Synopsis.—(Vol. 1894, p. 336.) **Gastric Lavage** proved effective after failure of cocaine, pilocarpin, etc.

HYDROPHOBIA. *Allan McLane Hamilton, M.D., New York.*

Diller in an exceedingly interesting report upon this disease, in which he gives statistics in regard to seventy eight cases, is of the opinion that many of the so-called cases are "utterly incredible and wholly spurious." He deplores the popular agitation which has attended the establishment of so-called "Pasteur Institutes" which have undoubtedly led to the increase of hystero-epilepsy both in this country and France, and lays little reliance upon the statistics of the ardent supporters of the founder of the inoculation cure and his followers. His own statistics in regard to incubation, disprove the theory so long held that bites nearer the centre of the nervous system are more dangerous or more likely to be followed by a brief period of incubation.

REFERENCE.—"Med. News," June 16, 1894.

HYPERIDROSIS. *T. Colcott Fox, M.B.*

The subject of undue sweating of the feet is one that is continually being discussed in the Medical Journals, and the present year has not been without the usual contributions.

The "Therapeutic Gazette" for March, 15, 1894, calls attention to the following points:—

(1,) Cleanliness of feet and their coverings are necessary. Soft woollen stockings are probably the best, and shoes of thin leather. Rapid evaporation is desirable. (Thin's method for keeping the feet and sweat disinfected is given in most of the text books.)

(2,) Hebra's[1] treatment with diachylon plaster dressings is well known, but often is slow or fails. Duffin's modification of strapping the feet with stout lead or soap plaster allows the patient to get about. This treatment illustrates the fact that dressings causing complete exfoliation of the cuticle are often useful.

(3,) Application of chemically drying materials and anti-hydrotics, *e.g.*, **Alcohol** with **Tannin** or **Naphthalin**, or powders such as **Salicyl-Talc** or **Salicyl-Tannin-Starch**, or **Sulphur.** Powdered tartaric acid

is unsatisfactory. The application of a solution of 5 to 10 per cent. **Chromic Acid**, followed by an antiseptic powder, is of service, also **Perchloride of Iron** and **Glycerine**.

(4.) Neebe's treatment by local baths of **Hydrochloric Acid** : (*a*,) When the feet are galled or very tender, especially in hot weather, he dusts, as a preliminary treatment, the stockings with **Salicyl. Talc** or **Compound Talc Powder** ; (*b*,) Crude hydrochloric acid in sufficient quantity to just cover the soles and not to touch the skin beyond is then poured into a flat vessel of stone or glass or porcelain, large enough to receive the two feet. The heel is first soaked for five minutes, then the sole, and finally the feet are washed in soap and water. The bath is stopped if painful. Very tender areas are healed with ointment. The bath is repeated twice weekly. This treatment is not nearly so formidable as it sounds, and is recommended on a fifteen years' experience. For nervous subjects 25 per cent. of water may be added to begin with.

Protection of the face is needed from the irritating vapours.

Patients who object to this treatment may paint the soles and the skin between the toes every morning with a 10 per cent. solution of **Nitrate of Silver**, until all the skin has exfoliated, and afterwards occasionally. He thinks this better than chromic acid.

The recommendations in the "British Medical Journal" illustrate many of the principles just alluded to. Sympson for bromidrosis recommends the socks or stockings to be dipped in a warm solution of **Boro-Glycerine** and dried before wearing, and another writer suggests 1 in 40 **Carbolic Solution**, and wearing them nearly dry. This is a modification of Thin's treatment.

Cyril W. Thomas likes the **Salicylic Acid** preparation used in the German army, (acid. salicyl. ℥j ; Sevum preparatum ℥j). Hibernicus by using a foot bath of 1 in 8 carbolic acid set up inflammation and free desquamation, which brought about a cure. Medicus paints on ℥j of glycer. acid. carbolic to ℥vij of glycer. acid. tannic. George Fisher rubs in **Castor Oil** each night. Vignol paints the feet every forty-eight hours with **Perchloride of Iron** mixed with one third of its weight of glycerine, and allows them to dry in the air ; in the intervals the feet should be washed with vinegar and water night and morning and powdered with salicylated talc or starch and tannin. **Naphthol Spirit Lotion** and **Naphthol-Starch Powder** are recommended, and also for dusting into the socks and boots **Potass Permanganate** grs. xlv. **Salicylate of Sodium** grs. xxx, **Bismuth Subnitrate** ℥iss, **Talc** ℥j.

Edgar Duke extracts the following from past issues of the "British Medical Journal" : (*a*. Wear low shoes, and dust the feet over twice daily with **Iodol** ; (*b*,) Wash the feet at night with very hot water,

put on white cotton socks, and immerse the feet thus covered in cotton methylated spirit, and let them dry in bed. In the evening wear socks kept constantly saturated with spirit. Stout canvas shoes are the coolest; (*c*) Wash with soap and water, dry, and apply night and morning a lotion composed of lead acetate, ℥j; methylated spirit of wine, ℥ij; distilled vinegar, ℥j; water to ℥xvj. Obsrewski believes in administering 20 to 30 drops of **Ext. Hydrastis Canadensis Fluidum** at night, or in aggravated cases 25 to 30 drops thrice daily for several days.

The treatment of blisters and excoriations of the feet is an allied subject. Hertz finds a 20 per cent. solution of **Ichthyol** the most effective, and the following is said to be used in the German army :—

℞ Black Soap	52 parts		
Water	27 parts	Oxide of Zinc	6 parts
Soft Paraffin	15 parts	Essence of Lavender	q.s.

Synopsis.—(Vol. 1894, p. 341.) ℞ Washed Sulphur, ℥ss; Powdered Arrowroot, ℥iv; Salicylic Acid, gr. vij; M. *Sig.*—Dust over feet and between toes: Kaposi prefers: ℞ Finely Pulverized Talc, 20 grms.; Pulverized Subnitrate of Bismuth, 25 grms.; Pulverized Permanganate of Potassium, 1·50 grms. Pulverized Salicylate of Soda, 1 grm. Mix with great care.

HYPERTRICHOSIS.

Synopsis.—(Vol. 1894, p. 341.) Electrolysis. Equal parts Yellow Sulphide of Arsenic and Quicklime made into a paste with hot water and allowed to dry on the skin. Ethylate of Soda for moles.

HYSTERIA.

Allan McLane Hamilton, M.D., New York.

That serious varieties of hysteria may exist with certain structural changes and sometimes much general organic disorganization of the central nervous organs cannot be denied. Hirt points out that muscular atrophy may not only be of muscular and spinal origin and appear as a manifestation of hemiplegia, posterior spinal sclerosis, diabetes, etc., but that it may also represent a phase of hysteria. The peculiarity of hysterical muscular atrophy is that it is usually limited to one half of the body, although it exceptionally involves a circumscribed nervous area, such, for instance, as that supplied by the distribution of the sciatic or the radial. Motility diminishes in direct proportion with the atrophy of the muscle bundles. Sensibility varies in individual cases. Diagnosis is based upon the psychic attitude of the patient and the occurrence of hysterical or hystero-epileptic seizures.

The editor has seen repeated cases where atrophy and symptoms, which resembled spinal diseases with destruction of the anterior horns,

occurred in bedridden hysterical patients, and in one case his experiments agreed with that of Hirt, who in a case of this kind found no lesion after death other than muscular wasting.

Hysterical tremor is the subject of an interesting paper by Dr. Henry Lloyd, of Philadelphia. It may be partial, or general, limited to one arm, or of the hemiplegic or paraplegic type, or general, involving the trunk and neck muscles. It has been transferred by the use of magnets and suggestion, and is most erratic in its appearance and course, for the duration varies greatly, it appearing sometimes after an access of convulsions, and it may be temporary or continued. The author agrees with Gilles de la Tourrette in placing it among the prominent stigmata of hysteria, because of its tendency to recurrence. It is at times very slight, but again it may be so violent as to interfere with walking, riding, or any voluntary action. Like the tremor of sclerosis it is increased by a voluntary motion, but differs from the latter in the nature of its rhythm.

According to Lloyd it always presents a definite type. Like other forms it increases when the individual is under observation, or during excitement.

Lloyd makes the distinction between the tremor of hysteria and that of insular sclerosis, from the fact that in the latter there is a certain amount of a jerky to-and-fro motion, and that in the more serious affection there is drawling, monotonous, or embarrassed speech. As a rule the patients are of the female sex. In every case the existence of coincident symptoms should be taken into account.

Effortz presented to the New York Neurological Society the case of a woman, aged thirty-five, who for sixteen years had had contraction of the fingers and hand, of both upper extremities, and complete anæsthesia of the face and body. This patient was easily hypnotized. When cataleptic the contracted fingers were readily relaxed on suggestion.

A feature of the hypnotic state was a double strabismus, which disappeared when she was aroused. The patient was also subject to hystero-epilepsy, and could auto-hypnotize herself. There was hysterical blindness of the left eye, while in the other the visual field was limited, and this was associated with deafness.

The editor has treated several such cases: hysterical contractions of several varieties disappeared during the hypnotic state, but even persistent treatment of this kind had no permanent good effects.

References.—"The American Journ. of the Med. Sec.," Sept. 1893, p. 267; Meeting of May 1, 1894.

IDIOCY.

G. E. Shuttleworth, B.A., M.D.

New Medical and Surgical Methods in the Treatment of Mental Defects.

I.—Thyroid Treatment in Sporadic Cretinism.

The successful results obtained by thyroid treatment in cases of myxœdema (referred to in last year's "Annual," p. 429) have led to its employment in sporadic cretinism, the symptoms of which, though dating from an early age, present a striking analogy to the former affection. The name of sporadic cretinism applied in 1871 by Dr. Hilton Fagge to that peculiar class of imbecile dwarfs characterized by absence or atrophy of the thyroid gland (this characteristic having been ascertained by Curling, in 1850), broad, flat-featured face, pouting lips, protruding tongue, loose, baggy skin, a curved spine, and protuberant abdomen (see portrait in "Medical Annual" for 1894, opposite p. 374), with peculiar slowness both of physical and mental functions, is the equivalent of what Bourneville designates "Idiotie Myxœdémateuse." The Special Committee of the Clinical Society, presided over by Dr. Ord, reported in 1888 that a general review of the symptoms and pathology leads to the belief that "the disease described under the name of myxœdema, as observed in adults, is practically the same disease as sporadic cretinism when affecting children"; and consequently it was but reasonable to suppose that the treatment found efficacious in the one case would succeed in the other.

In an interesting article by Mr. Cecil Beadles, in the "Journal of Mental Science" (July and October, 1893) we find a tabulation of one hundred cases of myxœdema and eleven of sporadic cretinism treated by thyroid gland, in the three forms of transplantation, injection, and direct feeding. The earliest he records is a case under Dr. John Lockhart Gibson, of Brisbane, in which grafting of the thyroid of the lamb in the mammary region of a cretin (July, 1891) was followed by steady improvement for the first six months, with subsequent relapse. In May, 1892, however, intraperitoneal grafting was effected with the result that "it cured the patient's myxœdema and lessened his cretinism." At the Edinburgh Medical and Chirurgical Society, in February, 1893, Dr. Affleck reported a case of sporadic cretinism greatly improved by thyroid grafting on three occasions by Mr. Caird. In the "Lyon Médical" for August, 1892, the successful treatment by thyroid juice injection (followed by subsequent grafting) of a cretin, aged seven, was reported by Dr. V. Robin. At the discussion at the Edinburgh Medical and Chirurgical Society, in February,

Fig. A.

Fig. B.

1893, Dr. John Thomson gave an interesting account[1] of a mild case of cretinism in a girl of five treated by feeding with raw sheep's thyroid—at first ¼, subsequently ½ gland, twice a week—and in an account published a year later, she is stated to be "improving in every way, not only in strength and appearance, but also in vivacity and activity, and apparently in mental capacity." In another more typical case under the same physician[2], portraits of which we are by his courtesy permitted to reproduce (*Plate XIV, A, B, C, D*), a wonderful improvement followed the administration of sheep's thyroid (¼ gland twice a week), although the lad was over eighteen years of age when put under treatment in December, 1892. He was then but 33½ inches in height: after twelve months' treatment he had grown to 37½ inches, whilst the change of facial expression and of figure was most marked, denoting an acquired activity both of mind and body in marvellous contrast to his original state. The physical improvement is in all cases of young cretins evidenced by a striking increase in stature. Thus, Dr. Byrom Bramwell mentioned at the Edinburgh Medical and Chirurgical Society[3] the case of a girl of eight and a half years who grew an inch during five weeks' thyroid feeding.

An extreme case of sporadic cretinism—a girl over sixteen, whose stature was but 29½ inches—was described by Dr. Byrom Bramwell, in the "British Medical Journal," for January 6th, 1894. Treated with 5 drops of Brady and Martin's **Thyroid Extract**, at first daily, subsequently every other day, she grew in six months 6½ inches (equivalent to one-fifth of her height before treatment), the œdematous infiltration of the tissues disappeared, the skin lost its harshness and became soft and smooth, and the facial expression changed from a striking similitude to a bull-dog, to the appearance of human intelligence. In this case it is noted that the breadth of the mouth diminished from 6 cm. to 4½ cm., owing to reduction of size of protuberant lips, whilst the measurement of mouth from above downwards diminished from 5 to 3 cm. Other instances of the beneficial results of thyroid feeding have been described by Dr. Carmichael[4], of Edinburgh, by Dr. Vermehren,[5] of Copenhagen, and Mr. A. G. Francis,[6] of Hull, and the history of two brothers so treated, respectively by Dr. Railton and Dr. Telford Smith, were given in the "British Medical Journal," of June 2nd, 1894. Illustrations of these cases, *Plate XII, Fig. A* before, *Fig. B* after treatment, are (by the kind permission of these gentlemen) reproduced, and the marked improvement in physique and in expression as the result of treatment is very apparent. The younger brother, a patient of the Royal Albert Asylum when thyroid feeding was commenced (at the suggestion of Dr. Shuttleworth) in March, 1893, being

but nine years of age, improved more rapidly than the older brother, who was fourteen years of age when put under treatment. In the former case Dr. Telford Smith used $\frac{1}{8}$ part of a lobe twice a week, in the latter Dr. Railton commenced with 36 grains of raw thyroid gland daily, and subsequently 2 to 5 of Burroughs and Wellcome's 5-grain tabloids. In each case notable physical and mental improvement is recorded; in the younger boy there was an increase in stature of $4\frac{1}{4}$ inches in nine months; in the older, an increase of 4 inches in less than a year. In both cases a tendency to excessive loss of flesh was noticed in the early stages of treatment, also an undue rise of temperature, but these symptoms were checked by adjusting the dose.

Dr Telford Smith has more recently described, in a paper read at the British Medical Association's Annual Meeting, at Bristol, the sequel of this, besides three other cases of sporadic cretinism at the Royal Albert Asylum successfully treated by thyroid feeding. The improved appearance of these cases is well shown by the photograph which we are permitted to reproduce (*Plate XIII*); and a few remarks from Dr. Telford Smith's summary[7] may be here quoted. "The chief effects of treatment (latterly 5-grain tabloids of thyroid gland daily at dinner time) may be summed up as follows:—

"Almost after the first dose the temperature (originally sub-normal) began to rise, gradually approaching the normal as treatment was continued.

"At about two or three weeks the skin began to desquamate, chiefly on the hands, feet, and face, and to assume a more normal tint and feel; it lost its dry, rough, waxy appearance, and perspiration became perceptible.

"The myxœdematous condition of the subcutaneous tissues began to subside and the outlines of the features became more defined and sharp. The abdomen became less protuberant, the hands and feet less thick and spade-like, and there was a general loss of weight, which if excessive called for adjustment of the dose of thyroid. A comparatively rapid increase in height commenced, and the previously delayed second dentition began to appear. The cutaneous sensibility became more near the normal, and the marked constipation gave place to a healthy regularity. In the two cases where an umbilical hernia was present it became almost imperceptible.

"After about two or three weeks' treatment a gradual change became noticeable in their temperament and manners, the phlegmatic condition gave place to a spontaneous activity, their expression became more lively and intelligent. They became playful and even mischievous,

PLATE XIII.

Group of Cretins improved by Thyroid Treatment.

and were constantly in motion, and the sulkiness of disposition and disinclination to be amused, passed off.

"When the treatment was suspended a slow deterioration set in, but the rate of this was much more gradual than that of their former improvement."

The two conditions, the temperature at night, together with the state of general nutrition, afford a useful guide as to when a sufficient dose of thyroid has been administered. If the temperature can be kept at about 97° to 98°, and at the same time emaciation is not set up, the physiologically useful dose has been gauged.

Can cretinism early diagnosed and treated be eradicated? We cannot definitely reply to this question, but we know that in cases of equal degree the younger we commence, the greater will be the improvement. With our present experience we may assume that permanent improvement depends upon permanence of thyroid treatment.

Dr. Telford Smith, to whom we are indebted for the substance of the foregoing remarks, concludes his interesting paper by the statement that "the cretinoid form of imbecility is certainly the one which offers the most hope of improvement from early and continuous medical treatment apart from special training." May we not, however, further say with Dr. Crary,[3] of New York, that "if we break away from the term Cretinism, with its vivid picture of the 'Pariah of Nature,' and look more closely for the symptoms of myxœdema, we will find that many so-called idiots, imbeciles, cases of arrested development, etc., among children, are in fact cases of functional inactivity of thyroid gland, and hence susceptible of treatment by thyroid extract, with improvement and perhaps even cure?" The successful treatment of myxœdema and cretinism by administration of the thyroid gland is indeed a triumph of experimental observation, with which the names of Schiff, Victor Horsley, and Fuhr are worthily associated.

II.—Craniectomy in Microcephalus and other forms of Idiocy.

Of operative methods employed to relieve idiocy, the records are not very encouraging. The progress of antiseptic surgery having led surgeons to explore the cranial cavity, numerous attempts have of late years been made to mitigate the unfortunate condition of idiots by operation. Craniectomy, or the removal of strips or segments of bone from the skull, has been extensively tried both in America and Europe; the earliest operation of this kind being (according to Bourneville) one by Dr. Fuller, of Montreal, in 1878, an idiot of two years being craniectomised with favourable result. It was not,

however, till 1890 that the operation of craniectomy was largely practised; in this year cases were reported by Keen, of Philadelphia, and Lannelongue, of Paris. In 1891, Victor Horsley reported two cases to the Annual Meeting of the British Medical Association, and subsequently the operation has been adopted by many surgeons.

On reviewing the early notices of successful cases (reported soon after the operation) in the light of more recent experience, a sense of disappointment is felt at the comparatively trivial results gained by operative procedures ingeniously devised and skilfully carried out. Thus in 1891 M. Lannelongue[9] reported twenty-five cases, with only one death, and said that the greater number of the survivors (microcephalic idiots) were "manifestly ameliorated." Yet after three years no more is heard of the progress of these cases, and the opinion of Dr. Bourneville, physician to the department for idiot children at the Bicêtre, given in his last published volume of "Recherches," is evidently not in favour of the operation. Dr. Bourneville indeed is very emphatic upon the superiority of the medico-educational treatment of these cases. Dr. Keen, of Philadelphia, in an address to the American Association of Medical Officers of Institutions for the Feeble minded, in 1892 gave frankly the result of his experience. Of eleven cases operated on, seven survived, four died. Of the seven survivors, one had shown no improvement, in five there was a "moderate and slow" improvement, and in one the improvement was a little more marked. Keen summed up his views as follows: "In the case of a microcephalic idiot, I shall certainly be willing to operate. I shall explain to the parents that about one in four dies—that if the child survives there may be no improvement whatever, but that the probabilities are that there will be moderate improvement." He declines to operate in children over seven years of age.

Jacobi in his address to the Rome International Medical Congress, entitled, "Non Nocere," denounces craniectomy in no measured terms. He advances the opinion that the improvement that has followed the procedure is slight, and is not attributable to the operation; and that instead of an expansion there is often a diminution of the cranial cavity. He alludes to "such rash feats of indiscriminate surgery, if continued in the presence of fourteen deaths in thirty-three cases" as "stains on the hands and sins on the souls of the operators," not removable by "oceans of soap and water," or "by any disinfecting power of corrosive sublimate"![10]

In this country Mr. Victor Horsley is perhaps the best known exponent of the operation. In July, 1891, he detailed (at the British Medical Association's Annual Meeting) two cases, one fatal, the other

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successful, and urged that in view of the hopelessness of the condition and the chance of improvement, craniectomy should be "carried out in all cases." His favourable anticipations in the case of N.L., a microcephalic idiot then aged four, on whom he operated early in 1891, and again in 1893, are unfortunately not borne out by a recent report from Dr. Telford Smith, in whose care the boy is now at the Royal Albert Asylum, Lancaster. He states that the "only noticeable improvement is that the boy has almost given up the habit of slapping his own head, and that he is slightly less restless. There is no attempt at articulation, and since the last operation, his parents do not think there is any change in him." In another case of microcephaly (the child of a medical man) the father writes a year after the operation—"We see no improvement in him either mentally or physically."

To the present writer it appears that the all-important matter is the judicious choice of cases for operation. In a case of simple microcephalus, when the small skull is simply moulded to the brain which has been arrested in its development at a stage corresponding to that of the fifth month of intra-uterine life, it would seem futile to expect that cerebral development would be fostered by cutting chinks in the skull, which after a short period would probably be filled up by bony matter, apt to encroach upon the cranial cavity. In the light of numerous autopsies, described by Bourneville and others, the theory of premature synostosis as a common cause of microcephalus must be given up, and operations based upon this theory abandoned. Yet there are exceptional cases which appear[11] "to be transitions to other complicated malformations of the brain, so that microcephaly might be associated with encephalocele, porencephaly, and hydrocephalus," and whenever signs of pressure present themselves operative interference is quite justifiable in the interest of the comfort of the patient.

Binnie, in a thoughtful paper[12] advocates craniectomy in "simple mal-development of brain, producing imbecility, as likely to remove a *something* which has hindered development or prevented the action of some parts of the brain already more or less developed"; and he instances the establishment of normal brain-pulsation (previously absent) by opening the skull. However, this may be, there is no doubt that beneficial results have been frequently obtained by cranial operations, in cases of traumatic, epileptic, and paralytic idiocy, the point being not to delay operating until serious atrophic changes have been set up.

In this connexion reference may be made to the observations of Dr. Claye Shaw, on "Brain Pressure and Trephining," published in the "Journal of Mental Science," for October last. He advocates the

removal of a large piece of bone for the relief of cranial pressure in cases of general paralysis, and quotes two cases in which considerable relief of symptoms had resulted from the operation.

III.—Adenoids in relation to Mental Dulness.

The present writer has recently had occasion to note the frequent occurrence of post-nasal adenoid vegetations in young people, not imbecile, but presenting symptoms of mental dulness. The subject has of course been referred to by rhinologists and laryngologists, notably by Guye, of Amsterdam, and in this country by Woakes, Hill, Watson Williams, Macnaughton Jones, and Scanes Spicer, but its importance has perhaps scarcely been appreciated by those charged with the training of "backward" children. It is remarkable how these obstructions to nasal breathing produce an appearance of stupidity not indeed dependent on defective brain power, but promptly disappearing on the removal of the adenoids. In a case under the writer's care, the immediate cessation of night-terrors and marked improvement in speech were amongst the beneficial effects of the operation.

References.—[1] "Edin. Hospital Reports," vol. ii., 1894; [2] "Edin. Med. Journ.," May, 1893, and Feb. 1894; [3] Ibid., May, 1893; [4] "Lancet," March 18, 1893; [5] "Brit. Med. Journ.," (Epitome), April 15, 1893; [6] Ibid., April 8, 1893; [7] "Journ. of Mental Science," Jan., 1894; [8] "American Journ. of Med. Sciences," May, 1894; [9] "Congrès Francais de Chirurgie," Mai 31, 1891, p. 73; [10] "New York Med. Record," May 19, 1894; [11] "Journ. of Anat. and Phys.," July, 1894; [12] "Annals of Surgery," April, 1894.

IMPETIGO.

T. Colcott Fox, M.B.

Dilute **Ammoniated Mercury** is now a time-honoured remedy for impetigo in this country, but it is interesting to note some French formulæ:—

℞ Boric Acid	gr. xlv	Vaseline	℥j
℞ Salicylic Acid	gr. vij	Boric Acid	℥ss
Oxide of Zinc	℥ss	Vaseline	℥j
℞ Plaster of Vigo		Vaseline	āā equal parts

(Besnier.)

℞ Crystal. Acet. of Lead	gr. iij	Oxide of Zinc	gr. lxxv
Salicylic Acid	gr. ij	Vaseline and Lard	āā ℥ss

(Dubreuihl.)

℞ Oil of Cade	♏l		
Yellow Precipitate	gr. x	Simple Cerate	℥j

(Vidal.)

INFLUENZA.

Synopsis.—(Vol. 1894, p. 343.) Salipyrine, gr. 15 to 30, regarded by Mosenzeil as specific.

INSANITY. *James Shaw, M.D.*

I.—Acute Mania.

Diagnosis and Treatment.—The forms from which it is sometimes difficult and always (on account of the difference in prognosis and treatment) important to distinguish acute mania, are acute delirium, agitated melancholia, maniacal phase of circular insanity, periodical mania, exalted paranoia, exalted general paralysis with initial or episodial excitement.

In *acute delirium* there is always some pyrexia, in acute mania rarely and then only in cases approximating acute delirium in other ways, and only safely treated on the same lines. In acute delirium there is blurring of consciousness amounting in most cases to complete loss, whereas the acute maniac is, if anything, too wide awake. The subject of acute delirium seldom reacts either facially or verbally to external stimuli, the acute maniac nearly always does. The physiognomy of the former denotes diminution, that of the latter augmentation of force. Defective speech and tremor, constant in acute delirium, are rare in acute mania.

In *agitated melancholia* the attitudinal, facial, and verbal expression is unintermittently one of grief, whilst in acute mania weeping and other signs of depressive emotion are transitory, changing suddenly to those of exaltation or anger. The abnormal acuteness of the senses, especially of that of hearing, nearly always present in the early stages of acute mania, is absent in agitated melancholia.

In *folie circulaire* there is the history of a prolonged melancholy phase immediately, or almost immediately, prior to the onset of maniacal exaltation. The depression which sometimes precedes acute mania is mild and of short duration. Failing a history there are appreciable differences in the actual symptoms. In the maniacal phase of *folie circulaire* the patient, whilst quite as loquacious and active as the acute maniac, is more coherent, frivolous, jocular, and mischievous. Unlike acute mania illusions are more frequent than hallucinations, and delusions are absent or rare.

The attacks of *periodical mania* are often preceded by severe headache and sometimes by febrile symptoms. There is the history of previous attacks and generally of neurotic or insane heredity. The patient, though very loquacious and active, talks more coherently, acts more consistently, has more illusions and fewer hallucinations, is much less often the subject of delusions, and is much more frequently

the victim of moral or affective perversions and morbid impulses than the acute maniac properly so-called.

It is a common occurrence to be told by a patient's friends that he is suffering from "religious mania," or "mania for riches"; when in reality the case is one of acute mania with some varying delusions relating to religious matters, or to the possession of wealth, title, or power, and not at all one of *exalted paranoia.* In the latter the delusions as to religion (being the Messiah, having missions, etc.), wealth, rank, etc., are constant, unvarying, fixed, and systematised, being defended with arguments more or less, sometimes very, plausible; any excitement there is arises from the delusions and is episodial or consequent on opposition or undue encouragement. Paranoia, except perhaps at the climacteric, is a weed of very slow growth, whereas acute mania *quâ* acute mania is, as a rule, fungus-like in the rapidity of its developement.

The last comparison applies with even more force to *general paralysis* and acute mania. Nevertheless, as there are some cases of the latter with exalted delusions and tremor and a few cases of the former with a maniacal or pseudo-maniacal onset of the mental symptoms, the diagnosis cannot always be made off-hand. Taking the generality of cases, however, there is, prior to the developement of decided mental symptoms in general paralysis, a history (not met with in acute mania) extending over months or even years, of tremor, facial alteration, defective speech, muscular weakness and inco-ordination, and inability to perform fine, manual customary operations.

Puerperal mania and *acute hysterical*, *pubescent*, and *masturbational insanity* allow themselves to be diagnosed from typical acute mania by the history and actual physical condition of the patient, the age, and, in the first, dislike of husband and child with rather more eroticism than is usual in acute mania; in the third and fourth by dislike of the opposite sex, of parents, brothers, or sisters; in the third also the maniacal excitement is a mere episode of comparatively short duration, and in the fourth it is secondary to solitary hypochondriacal brooding, and is often marked by the presence of false taste and smell perceptions.

TREATMENT.—The treatment of acute mania can, in the great majority of cases, only be satisfactorily carried out in an asylum. It is impossible in a large town, and only exceptionally possible even in the country. At all events the patients are so headstrong and intractable, as a rule, that it is hardly possible to manage them except under certificates. In cases of undoubted acute mania, with good bodily health, hypodermic injections of **Hyoscyamine** or **Hyoscine** will be

found very useful in procuring quietude pending removal, or to render the latter process more easy of accomplishment. Three or four of the one eightieth (1/80) of a grain hyoscyamine tabloids answer admirably in many cases, though more may be required. Initial daily doses of hyoscyamine of a thirtieth (1/30) of a grain for women, or a twentieth (1/20) for men, have never done anything but good in my experience. Asylum patients under my care have had as much as a fifth (1/5) hypodermically without any ill effects, after having been tried with smaller doses. Should a mere calmative be required however, a 1/80 of a grain tabloid may be given twice a day. Hyoscine being much more powerful a 1/150 of a grain tabloid would be the hypodermic dose for an untried patient. Solutions both of hyoscyamine and hyoscine keep badly. To procure sleep in a patient with healthy thoracic viscera **Chloral Hydrate** in 20 to 40-grain doses will be found more certain than the newer hypnotics. These measures, if not persisted in for more than a few days, do not prejudice the patient's chances of recovery. But if there is a tendency to acute delirium they should be avoided and reliance placed on the warm wet pack, a copious fluid diet, meat juice, meat soups with onions, warm spirit and water at bedtime, forcible feeding being resorted to if insufficient aliment is taken. **Cannabis Indica** (tincture) in ½ drachm to 1-drachm doses two or three times a day is sometimes useful in acute mania. **Pilocarpine** (hydro-chlorate or nitrate) in small doses given hypodermically has proved very beneficial in my hands and those of others in cases tending towards acute hysterical insanity. The bromides, even the ammonium salt, as they have a tendency to reduce physical strength in large doses, and are of little use in small ones, are as a rule better avoided. Should private house treatment be decided upon it will be found that tonics, such as **Quinine** and **Iron**, give the best results. Strychnine increases excitement without offering sufficiently compensatory advantages. One, two, or three 2-gram **Cascara Tabloids** may be given every night where there is constipation. The diet should be copious, nutritious, easily assimilated, and require little or no mastication, milk and eggs constituting the sheet anchor.

II.—Climacteric Insanity.

Diagnosis and Treatment.—It is distinguished from other depressive insanities by the previous history of flushings, heats, perspirations, fornication, vague pains, headaches, feelings of fulness and swimming of head, paræsthesiæ, gastro-intestinal disturbances, irregular or deficient menstruation, dysmenorrhœa or menorrhagia, facial muddiness, pigmentation and hirsuties. The emotional depression is

much less intense than in typical melancholia, and the suicidal attempts are silly, half-hearted, and undecided. Severe insomnia is a characteristic feature, and morbid apprehensiveness is frequently present. Climacteric insanity is observed occasionally in men, but most of the cases occur in women in their fifth decade. Married women who have had few or no children, or at all events no children for many years before the climacteric appear to be especially vulnerable. Sterility, absolute or relative, has been a feature in the history of nine-tenths of the cases that have come under my own observation.

TREATMENT.—These cases are capable of treatment at the seaside or in a bracing rural locality, and are much benefited by an open-air life, care being taken to avoid over-exertion. It should not be forgotten, however, that the half-hearted suicidal attempts might by accident prove successful. This being kept in view it is always worth while to endeavour, when feasible, to spare the patient the depressing effects and the stigma of asylum residence. Institutions similar to the "convalescent homes" for other diseases are badly wanted for patients of the poorer class in the neurotic and incipient stages, or suffering from mild uncertifiable climacteric psychosis. The treatment of certifiable cases in such institutions would not at present, it is much to be regretted, be legal.

Various drugs are useful according to the concomitant symptoms, but the general treatment should be tonic and supporting, embracing **Iron** and **Quinine**; **Fellows' Syrup**, and **Arsenic**; **Bismuth** (especially lac. bismuthi) and **Calumba**; **Rhubarb** and **Gentian**; **Cod-liver Oil**. Against the insomnia **Sulphonal** in 20 to 40-grain doses acts well in most cases, and safely. Its action on these patients is enhanced by the exhibition at the same time of a few grains of **Gray Powder**. **Bromide of Ammonium** in small doses, 10 or 15 grains three times a day, is useful during the tonic treatment, diminishing apprehensiveness and irritability. To cure the constipation so often present 1, 2, or 3, 2-grain **Cascara Tabloids** should be given every night. If, as sometimes happens in the early stages, there are severe dysmenorrhœal pains, the liquid extract of **Salix Nigra** in 1 drachm doses every six hours gives more relief than anything except hypodermic morphine, and has at the same time a general sexual sedative action, similar to, but weaker than, that of the bromides. The craving for drink should be combated, and alcoholic stimulants must not on any account be prescribed in climacteric insanity. **Gentian, Nux Vomica,** and **Capsicum** in combination best and most safely counteract the drink crave when it is already established, and also help to prevent its inception.

III.—Paranoia.

Diagnosis and Treatment.—Ambitious paranoia is distinguished from acute mania by the delusions in the former being fixed and systematised, warrantable inferences from false premises, by the emotional exaltation being less, and by the absence of incoherence of thought and language, and of suddenly changing mood. From general paralysis it is diagnosed by the absence of palpable mental weakness and facility, by the tremor, if there is any, being emotional, not constant, or attending all muscular action, and never fibrillary as in general paralysis, and by the exalted delusions in the last mentioned disease being unsystematised, very variable, and accompanied by ludicrous incongruities. In mania with prominent delusions these are not systematised as in paranoia, and the emotional excitement is more continuous. In chronic mania with marked delusions there is palpable mental weakness and a history of a preceding acute maniacal attack, whereas paranoia is a primary disease, and the memory and power of calculation are good, often singularly so.

Erotic paranoia has to be diagnosed from mania, acute, chronic, or periodical, with unusually strong erotic tendency, as well as from nymphomania and satyriasis. The erotic paranoiac, generally a female, is free from maniacal excitement, and, unlike the nymphomaniac her love is more or less platonic and fixed on one person to whom, she irrepressibly pays court for the time being, regardless of his view on the matter or of his condition as to marriage.

For the differentiation of expansive religious paranoia and acute mania with religious delusions, see Acute Mania p. 332. Enough has been said as to the distinction between paranoia and chronic mania with delusions.

As these expansive forms of paranoia have to be distinguished from mania, and occasionally from general paralysis, so the depressive paranoias, persecutional, depressive religious, and jealous have to be differentiated from melancholia and also from some cases of general paralysis. A good key to the diagnosis from melancholia is the fact that paranoiacs blame others for causing their troubles and worries; melancholiacs accuse themselves.

In distinguishing between depressive general paralysis and depressive paranoia the somatic symptoms (tremor, inco-ordination, paresis, speech troubles, pupillary inequality, facial blurring, etc.) of the former, and the neurotic heredity and somatic stigmata (cranio-facial asymmetry, palpebral inequality, nasal deflection or depression, dental prominence or irregularity, inferior maxillary under—or over—development, auricular malformations etc.) of the latter should be borne in mind.

Certain cases of paranoia occurring in early life and heralded even in infancy or childhood by extreme selfishness, egotism, unsociability, sensitiveness, bad temper, and obstinacy, can be diagnosed in adult life from congenital imbecility with exalted delusions by the mental weakness in the latter and the want of systematisation of the delusions which have often been communicated or acquired from paranoiacs.

TREATMENT.—To combat the disease with even a fair hope of success it should be attacked early. Any known exciting cause should be removed and the patient taken away from irritating surroundings. The latter measure is important as a prophylactic of actual insanity in the quasi-congenital cases. As paranoiacs are keenly alive to all that transpires around them, are very sensitive as a general thing, and have good memories, residence in an asylum is not always advisable and may, in some cases, even prejudice the chances of recovery. However, the poor have seldom, at present, any other method of removing these patients from irritating surroundings, or to a healthier moral and physical atmosphere; homicidal and suicidal patients of all classes are safer there; and cases have occurred, though rarely, in which the patients have been cured of their delusions by comparing them with those of the lunatics about them, or have been partly convinced of their delusive nature by the knowledge of the position into which they have led them; further, patients occasionally seek the shelter offered by an asylum from their tormentors, real and fancied. Institutions on the semi-charitable plan at the seaside or in bracing country districts to which paranoiacs could be sent early, before they are certifiable, would be the means of preventing many drifting into incurable insanity.

Tonic treatment is the best with, in the erotic and expansive religious cases, **Ammonium Bromide** in ½ drachm or liquid extract of **Salix Nigra** in 1 drachm doses. For the auditory hallucinations so constant in the persecutional and suspicious cases, the hypodermic injection of small doses of **Morphine** or the application of a weak **Galvanic Current** to the head may be tried. For the visual hallucinations, met with most frequently in the religious cases, small doses of **Cannabis Indica** are sometimes useful. Cold shower or plunge baths and sea bathing are very beneficial to the general mental state, if not contra-indicated by physical or other conditions. Forcible feeding may be necessary. For a few days this may be carried out twice a day by means of a short soft rubber tube passed through one of the nostrils and along the floor of the nasal cavity to the pharynx, the fluid food being poured into a funnel fitted to the outer end of the tube. Afterwards, if the patient continues to refuse

food and has learnt to eject the fluid, a soft rubber open-ended stomach tube, either nasal or oral, must be used, and to avoid "mechanical restraint" the assistance of from three to six persons will be required unless in very exceptional cases. Patients should be fed at least twice a day and medicines may be given with the fluid. When food is taken voluntarily and drugs are refused it is not safe to introduce the latter surreptitiously into the former, as the patient may recognize them by their taste, smell, or effects, have his suspicions of poisoning strengthened, and refuse to take anything. Hypodermic medication may be resorted to in such circumstances when the administration of drugs is considered advisable. **Aloin**, given hypodermically in 1, 2, or 3-grain doses, acts satisfactorily where there is, as frequently happens in such cases, obstinate constipation.

Synopsis.—(Vol. 1894, p. 374.) **Duboisine**, neutral sulphate, $\frac{1}{2}$ to 2 milligramme doses. **Chlor-hydrate of Hyoscine**, dose $\frac{1}{4}$ to 1 milligramme. Klippel recommends **Naphthol, Alkalies, Purgatives** and **Milk Diet** for cases of auto-intoxication.

INSOMNIA.

Synopsis.—(Vol. 1894, p. 376.) **Electric Vibration.** Suckling prefers **Bromide** and **Chloral** generally; the latter is dangerous if heart is weak. They may be combined with **Hyoscyamine** and **Indian Hemp.** **Sulphonal** in warm milk every other night is useful in mental cases. **Chloralamide** or **Morphine** in small doses is useful if heart is weak. For insomnia of children Simon injects into rectum: R Chloral, gr. ij; Tincture of Musk, gtt. xx; Tincture of Valerian, gtt. xx; Distilled Water, ʒj. This may be repeated in two or three hours.

INTESTINAL SURGERY.

A. W. Mayo Robson, F.R.C.S.

Perhaps the greatest of the recent triumphs in abdominal surgery come under operations undertaken on the gastro-intestinal canal. Although some operators aim at accomplishing short circuiting, enterectomy, and such operations without any appliance, the not unsuccessful competition among those who do the largest amount of intestinal surgery, to introduce some apparatus which will save time, the greatest of all factors next to asepticity, proves that as yet the method by simple, unaided suture is neither the quickest nor best.

An extended experience with the decalcified bone bobbin leads me to advocate it more strongly than ever, it being simple in principle, easy of employment, and most efficient in practice, as proved by numerous cases in my own hands as well as in the practice of other surgeons. It was fully described and illustrated in last year's "Annual," but since then I have successfully excised and sutured, with the aid of the bobbin, ascending colon, descending colon, and small intestine, and have used it for gastro-enterostomy and for enteroplasty.

The mucous membrane being rendered continuous through the new

channel effectually guards against contraction, and the bobbin being made of decalcified bone, dissolves and is never seen again.

R. Baracz[1] suggests the use of plates of raw turnip as a substitute for decalcified bone plates in entero-anastomosis. He performed five gastro-enterostomies on dogs, using turnip as the coapting agent, with four recoveries, and three resections of the intestine with entero-anastomosis, with two recoveries. The former fatality was from peritonitis due to soiling of peritoneum with fæces at the operation, and the latter from intestinal occlusion consequent on the anastomosis being made too far from the sutured end.

Two successful cases[2] are reported of Paul's method of enterorrhaphy in which the distal extremity was invaginated into the proximal end of the gut, thus proving that it is safe to invaginate against the fæcal current, and doing away with one of the main objections to the method.

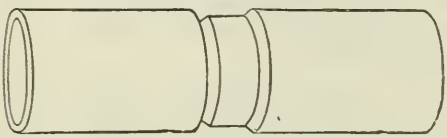

Fig. 20.—Decalcified bone tube.

Mr. Cozens Bailey[3] describes a modification of the operation of circular enterorrhaphy by the insertion of a decalcified bone tube in the lumen of the gut (*Fig.* 20). The tube should be about 2 inches long and with a diameter varying from $\frac{1}{2}$ inch to $1\frac{1}{8}$ inch, according to requirements. Around

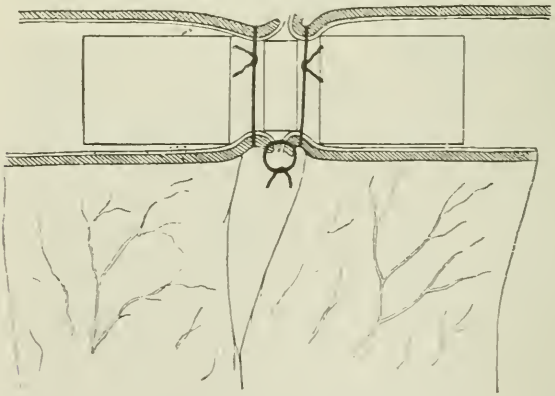

Fig. 21.—First stage of operation.

the centre of the tube run two grooves about $\frac{1}{4}$ inch apart, sufficiently deep to prevent a ligature from slipping, and the intervening portion is on a slightly lower level than the rest of the tube. After resection

a stitch is passed through all the coats of the bowel and the mesentery on one side, and then on through mesentery and bowel on the other side and tied, thus approximating the divided ends and preventing retraction of the mesentery. The tube is now inserted and the two

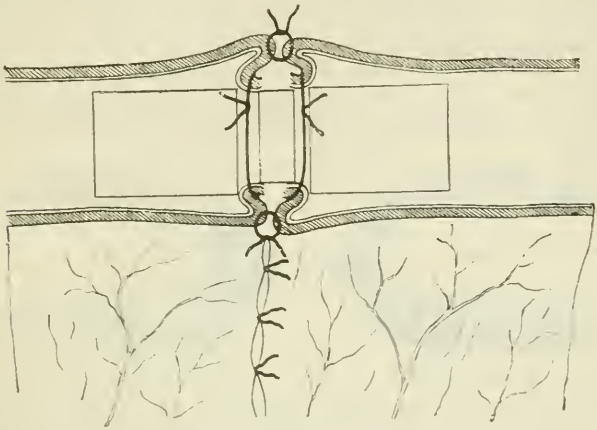

Fig. 22.—Operation complete.

ends slipped together evenly over it. Each end is brought well down over its corresponding groove and firmly secured by a circular ligature passed through the gap in the mesentery. The enterorrhaphy is completed by bringing the serous surfaces together with Lembert's sutures (see *Figs.* 21, 22).

Mr. Bailey has operated with moderate success on dogs by the above method.

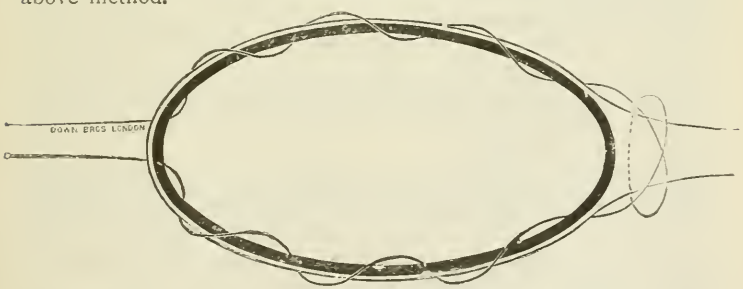

Fig. 23.—A suture of running thread as placed in end of bowel.

Mr. Murphy[4] (U.S.A.) advocates end to end anastomosis by means of his buttons. The intestine is cleared of its contents and clamped; the

mesentery of the part to be excised is ligatured and the intestine is excised ; next is applied a top stitch running along the incised edge, beginning opposite the mesentery and continuing down to the mesentery ; one return over-stitch is taken at the mesentery, and then the top stitch is continued up the opposite side to the starting point (*Fig.* 23). This constitutes the "puckering string," and when tied round the stem of the button which is then inserted, draws the cut edge within the clasp. The other end is inserted in a similar manner, and the button is then pressed together (*Fig.* 24).

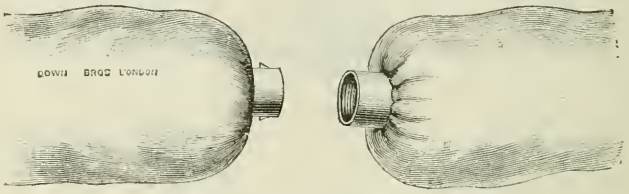

Fig. 24.—Button in end of bowel ready for closing.

Murphy[5] says that cicatricial contraction does not occur in cases united by this method, as the several histological layers are approximated and the union is linear. We scarcely see, however, how the histological explanation can be correct, seeing that the junction is effected by the sloughing of the portions included between the ends of the buttons. Although the method is undoubtedly expeditious, the presence of the large metal button in the alimentary tract would appear to present subsequent dangers of obstruction which absorbable materials would avoid.

Knut Haigh[6] after describing a successful case of gastro-enterostomy with Senn's plates, draws attention to the possible dangers following the use of Murphy's buttons :—

(1,) The margins are supposed to, and really do, produce pressure gangrene, thus opening a source of infection whose limits are unknown and not within our control.

(2,) A foreign body of the size of these buttons has repeatedly produced intestinal obstruction in cases that have come under the knowledge of the author, notably in cases of gall stones.

(3,) The plane of juxtaposition seems to be too small in extent to produce sufficient adhesions.

Duodenal Ulcers.—Dr. Kelynack[7] after stating that successful surgical treatment must be based on accurate knowledge of the subject, gives the following useful record :—

In the *post-mortem* Reports of the Manchester Royal Infirmary on medical cases examined since the year 1867 I can find only ten cases of undoubted primary duodenal ulcer. I have, of course, excluded all those associated with burns, and those where it appears to have been secondary to other conditions, such, for example, as gall stones. Only six of these ended by intraperitoneal perforation, the other four dying from hæmorrhage.

These cases suggest so many points of pathological interest and surgical importance that I here venture to append brief abstracts :—

F. C., aged nineteen. Ulcer on posterior surface of duodenum the size of shilling piece, with aperture of perforation the size of a threepenny bit. Acute general peritonitis with much dark grumous fluid in the abdominal cavity.

H. D., a young adult. Just beyond pylorus was situated a triangular-shaped ulcer. Punched out appearance. Edges not at all infiltrated. At base of ulcer small circular aperture into peritoneal cavity. Base of ulcer non-adherent. By its side was a diverticulum, from the duodenum projecting backwards, about one inch broad and a half to three-quarters of an inch deep. No cause apparent for its formation. Acute general peritonitis with liquid fæcal matter in abdominal cavity.

J. B., aged twenty-six. Round ulcer three-eights of an inch in diameter and half inch beyond pylorus. Base formed by peritoneum only, in which was small perforation. Acute peritonitis, with fæcal matter in abdominal cavity.

J. H., elderly male. Circular ulcer on posterior surface immediately beyond pylorus, diameter $\frac{3}{4}$ inch, margins black and indurated. Perforation through base into peritoneal cavity, acute peritonitis.

M. F., aged fifty-eight. Ulcer just beyond pylorus on anterior wall, size of threepenny bit. Characteristic punched-out appearance. Liver lying towards posterior wall, and separated by considerable interval from lower ribs. Transverse slit along floor of ulcer, which is formed alone by serous coat. Acute peritonitis. Fæcal material and much inflammatory lymph in abdominal cavity.

The last of these cases of perforative duodenal ulcer is of considerable interest from the interesting clinical history of the manner of onset.

P. M., aged nineteen. On January 4th he walked from Warrington to Manchester, and on arrival at the latter place suddenly experienced violent pain in the stomach, vomited, and fell down unconscious. Death occurred the following day.

Necropsy.—Immediately beyond the pylorus on the anterior surface was a small round perforation corresponding with the floor of a round ulcer, which presented a characteristic punched-out appearance. The edges were very distinctly indurated. Fæcal matter was seen still oozing through aperture; remainder of duodenum normal; stomach congested; peritoneum, acute diffuse septic peritonitis.

Although the group of cases ending by hæmorrhage consequent on erosion into the vascular structures forming the floor of the ulcer, or due to extension of the ulceration into neighbouring vessels, strictly speaking does not come within the field of our present consideration, yet the measures necessary for the treatment of perforation may possibly, in some modified form, ultimately be found to prove useful in the arrest of fatal hæmorrhage, and hence the brief record of even a few cases may assist in indicating the lines of surgical attack.

C. W., middle aged. At the junction of the first and second portions of the duodenum, on the internal aspect of the gut, was a large ulcer of the size of a florin. The floor was formed by the indurated head of the pancreas. In the centre of the floor there appeared a small aneurismal dilatation of an artery, which had ruptured into the intestine. The edges of the ulcer were thickened and reddened, but the neighbouring part of the bowel was healthy. The intestines contained a quantity of dark tarry material, consisting apparently of disintegrating blood. The stomach was somewhat dilated; the peritoneum was normal.

I. T., aged thirty-three. A circular ulcer, 1¼in. by 1 in., situated in the first part of the duodenum immediately beyond the pylorus and on the posterior wall; base formed by pancreas; stomach dilated and distended with blood and clot, which had apparently come from ulcer.

J. H., aged forty-six. Ulcer at commencement of duodenum on posterior wall ⅝ in. by ⅝ in. and nearly ½ in. in depth; edges rounded, firm and clean cut. The base presented small blood clot in orifice of large artery passing through head of pancreas; stomach. dilated; duodenum filled wtth fluid blood.

In the above cases death appears to have been due to an acute hæmorrhage. In other instances repeated hæmorrhages may quite as surely lead to the fatal termination, as in the following case, which I recently had the opportunity of examining *post mortem*.

W. S., aged twenty-nine. Patient gave history of hæmatemesis, with other signs of gastric ulcer. Lately, the vomit had assumed a brown colour, and the stomach had become dilated.

Necropsy.—Immediately beyond pylorus on the anterior wall was a large chronic ulcer having a diameter of an inch and a half. Edges were rounded, smooth, indurated, and undermined, so that a large cyst-like cavity existed beneath borders of ulcer. Floor of ulcer adherent to gall bladder, being separated only by a thin membranous layer. Stomach much dilated.

It is somewhat interesting to note that all the cases of duodenal ulcers recorded in our hospital pathological reports occurred in males. In seven the exact age was obtained, giving an average of nearly thirty-three years.

Dr. Lewis S. Pilcher[8] reports a large post-peritoneal diverticulum communicating directly with the duodenum, and containing partially digested food and bile. The walls were shown to be composed of inflammatory connective tissue. He suggests as a possible cause,

thrombosis of the vessels and necrosis of part of wall of the duodenum, and gradual invasion of the post-peritoneal tissue. The symptoms during life were at first abdominal pain, tympanites and constipation ; later, abdominal tumour, wasting, and hectic.

Mr. H. Percy Dean[1] reports a case of chronic ulcer of the duodenum successfully treated by excision, death taking place two months later from acute intestinal obstruction due to a band.

Enteroplasty.—Mr. Herbert W. Allingham[2] describes two cases of stricture of the intestine successfully treated by a new method, to which he has given the name of enteroplasty. The plan is only applicable to non-malignant stricture, and seems to be a distinct advance on the older methods of treatment in such cases.

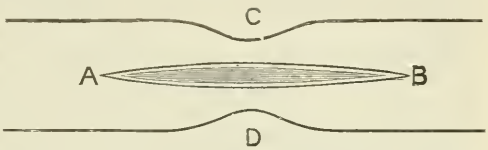

Fig. 25.—Enteroplasty showing longitudinal incision through stricture.

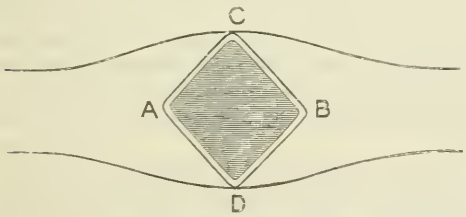

Fig. 26.—Longitudinal incision stretched into a transverse one.

Briefly, it consists in making a longitudinal incision (*A B*, *Fig.* 25) in the length of the bowel through the stricture and the bowel on the side of the gut opposite its mesenteric attachment, the gut meanwhile being clamped above and below. The gut is then caught hold of, on either side of and about the centre of the incision (*Fig.* 26, *C D*) and pulled apart so that it forms a diamond-shaped opening (*Fig.* 26). Further traction makes the longitudinal incision into a transverse one (*C D*, *Fig.* 27).

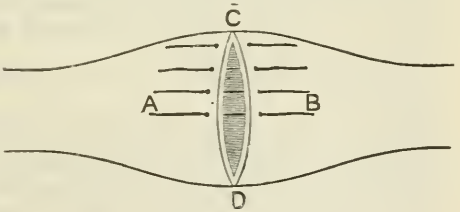

Fig 27.—Sutures partly applied, uniting the incision transversely.

The mucous membrane of the upper part of the transverse wound is sewn to the mucous membrane of the lower transverse wound with a continuous suture. Many Lembert's

sutures are now passed and the wound in the gut closed. As thus performed the operation is the adaptation of pyloroplasty to an intestinal stricture.

During the past year I have adopted this method in a case of simple stricture of the ascending colon with perfect success. Although the principle employed was the same as in Mr. Allingham's cases, in that enteroplasty, instead of enterectomy, was done, I was able to shorten the time of operation considerably by using a decalcified bone bobbin and uniting the intestinal wound by a continuous mucous and serous suture.

Mr. Allingham's first case of enteroplasty was also one of great clinical interest. The patient suffered from chronic intestinal obstruction which was not complete at the time of operation. A diagnosis of obstruction in the large intestine was made and the abdomen opened in the left iliac region; a greatly distended sigmoid flexure was found, but no apparent cause of obstruction. Iliac colotomy was performed, the bowel being opened and a Paul's tube inserted, with, however, a negative result. Next day the abdomen was opened over the cæcum—the cæcum, ascending and transverse colon were found much distended, but no cause of obstruction could be found in them. On passing the small gut through the fingers two coils were found adherent about the junction of the ileum and jejunum, and when separated a fibrous stricture was found in one coil opposite the adhesion, almost occluding the calibre of the gut.

Intussusception.—Mr. A. E. J. Barker[11] cites several cases of intussusception in children in which the intussusception was apparently reduced by inflation and manipulation, but where the conditions soon returned. He supposes that all were reduced except the last and most essential part; hence the recurrence. In one case the reduction was apparently completed four times in succession, and yet ultimately gangrene, collapse and death resulted. He advocates early abdominal section while the gut is still in farely good condition.

As the result of his experience he has arrived at the following conclusions:—

(1,) In all cases of intussusception in children injection of water or manipulation should be at once resorted to, if the patient is seen within a few hours of the onset of strangulation.

(2,) If these means fail after a fair trial (not too much prolonged), laparotomy should be at once performed.

(3,) That there is a certain proportion of cases amongst all varieties of intussusception which no amount of injection will relieve, or in which

injection would be dangerous, and these can only be dealt with by opening the abdomen.

Bearing on the same subject Dr. W. C. Beatley and Mr. G. W. Ridley[12] report a case of ileo-cæcal intussusception in a child aged eleven months in which the bowel was apparently completely reduced on two occasions, at first with water pressure, then on recurrence with air. Ultimately laparotomy was performed and reduction obtained with a successful result.

In the discussion on intestinal obstruction at the annual meeting of the British Medical Association, Mr. Page[13] holds that after careful examination under chloroform, and failure to detect the seat of the trouble, immediate abdominal section is indicated.

Mr. Hutchinson has the impression that laparotomy for intestinal obstruction of unknown origin is very seldom successful, nor is he free from suspicion that operation in itself is a cause of danger—if it should become a common practice to operate early, and without attempting to relieve by other means the fatality in these cases would be greatly increased.

He recommends vigorous kneading of the abdomen (under anæsthesia) the intestines being pushed from side to side, the patient being then turned on his belly and well shaken; lastly being held head downwards and again shaken up and down. Enemata are also administered with the body inverted. Many successes have followed this manipulation.

Morison stated that in all the cases he had operated upon, when seen post-mortem, intussusception excepted, he had never observed one likely to have been benefited by Mr. Hutchinson's plan of treatment.

Morison showed that acute typhlitis and perityphlitis sometimes present the symptoms of obstruction, and called attention to the danger of vigorous manipulation in these cases.

Rivington considered the heavy mortality of laparotomy for obstruction in the London Hospital to be due to the fact that the surgeon is called in too late.

Newman, as did nearly all the participators in this discussion, urged early administration of chloroform, careful examination of the relaxed abdomen, followed by an immediate exploratory incision. Should the cause of obstruction not be found the bowel should be short circuited or enterostomy performed.

We are firmly of opinion that all cases of intestinal obstruction should be seen by a surgeon at the earliest possible time, when if called for, operation may be undertaken before the case is rendered

hopeless by delay. We can point to numerous cases of the kind referred to by Mr. Hutchinson where we have undoubtedly saved lives which would have been sacrificed had any of the other methods of treatment short of operation been adopted.

Dr. W. Kidd[14] reports four cases of intestinal obstruction due to fæcal masses in the ascending colon and associated with movable right kidney, the latter condition being detected on the subsidence of the former under treatment. All the cases occurred in women.

Mr. James Bury[15] showed to the Pathological Society of London a specimen showing enormous distension of the sigmoid flexure, with ulceration and perforation, the result of simple chronic constipation in a man aged seventy-three.

At a meeting of the Liverpool Medical Association, Mr. R. W. Murray[16] showed a pathological specimen of an undeveloped ileum, which was shut off from the terminal cul-de-sac of the jejunum by a thin septum. The child, which was three days old and had a left-sided harelip, died with symptoms of intestinal obstruction.

Dr. Trzebicky[17] by comparing the notes of published cases and his results of operations on dogs, considers himself justified in concluding that about half the jejuno-ileum (about 9 ft.) may be removed without unjustifiable risk, provided that no complications are present.

Albert[18] suggests a new method of jejunostomy in carcinoma of the pylorus, the conditions being unfavourable for resection and gastro-enterostomy. After the abdominal cavity is opened by a transverse incision on the right side the presenting portion of the jejunum is drawn through the opening ; the greater part of the incision is then closed by provisional sutures. Anastomosis is now established at the base of the loop of jejunum between the proximal and distal portions in order to permit of a direct flow of bile and pancreatic juice from the upper to the lower part of the alimentary canal.

A second short incision is now made through the skin, parallel with and about 1½ inches above the first incision ; the skin between the two openings being detached from subjacent structures and raised ; the loop of jejunum is now drawn under this bridge, attached to the edges of the second incision and opened with the cautery on the third or fourth day.

The author reports two cases : one lived eight weeks and died from the progress of the disease ; the other succumbed to collapse three hours after.

The object of the method is to prevent the subsequent regurgitation of the intestinal contents.

Should this operation prove effectual it may render jejunostomy

worth doing in some otherwise inoperable cases of gastric cancer, but the ordinary operation of jejunostomy prolonged existence under such distressing circumstances that many surgeons thought it an altogether undesirable procedure, which view we expressed two years ago before the Royal Medical and Chirurgical Society.

Perforation of Typhoid Ulceration of the Intestine.—At the annual meeting (1894) of the British Medical Association, held at Bristol, Mr. A. Pearce Gould[19] led a discussion on the operative treatment of the above. He said: Operation is stated to have been performed in twenty cases for this condition: for Mr. Sutton's case must be added to the nineteen collected by Dr. Van Hook in his article in the "Medical News," November 21st, 1891. At least two of these cases should be excluded as of doubtful nature, and objection may possibly be taken to Mr. Taylor's case for the same reason. If so, it leaves us with seventeen cases and one recovery; but if the doubtful cases are included, we have twenty cases with four recoveries.

The details of the operation are closely like those for perforated gastric ulcer (see "Surgery of Stomach"). Statistics show that perforation of the bowel occurs in from 2·5 to 3 per cent. of all cases of typhoid fever, and that it is the cause of nearly 20 per cent. of the deaths in this disease. Rare cases of recovery after this accident are to be found in medical literature recorded by Tweedie, Todd, Dr. Long Fox and others. Cayley's words are: "Recovery does in rare cases follow perforation of the bowel in enteric fever." He has himself known it happen in six cases, and in three of these an abscess formed.

Dr. Van Hook, of Chicago, at the close of an article in which he records a successful case, sums up his position thus:—

(1,) There is no rational treatment for perforation in the course of typhoid fever, except laparotomy.

(2,) The indication for laparotomy when perforation occurs in typhoid fever is imperative.

(3,) The only contra-indication is a moribund condition of the patient.

(4,) Collapse is often at least temporarily relievable by hot peritoneal flushing.

(5,) The stage of the fever is not to be considered as an indication, or as a contra-indication for laparotomy.

(6,) The severity of the typhoid fever is itself not a contra-indication.

(7,) Early laparotomy affords the most hope.

(8,) The symptoms of peritonitis should not be awaited before operating.

(9,) In taking charge of all typhoid fever patients, it is the physician's duty to be ready, in case of perforation, to perform laparotomy.

(10,) The published statistics of laparotomy for this condition are strongly in favour of operation.

(11,) The technique, though not complicated, demands much thoughtfulness, acquired dexterity, great rapidity and thoroughness.

Mr. Gould remarks that those who have seen the flickering flame of life in typhoid fever ruthlessly extinguished by a sudden perforation may, nay must, doubt the power of surgery to save. Here, as elsewhere, a wise selection is the truest wisdom.

REFERENCES.—[1] "Pamietnik Tow. Lik. War.," No. 2, 1893, "Przeglad Chirurgiezny," Tom. 1, Liszyt 11, 1893; [2] "Brit. Med. Journ.," Feb. 3, 1894; [3] Ibid., July 14, 1894; [4] "Lancet," Sept. 15, 1894; [5] Ibid., Sept. 15, 1894; [6] "Annals of Surgery," June, 1894; [7] "Brit. Med. Journ.," Oct. 27, 1894; [8] "Annals of Surgery," July, 1894; [9] "Brit. Med. Journ.," May 12, 1894; [10] "Lancet," June 23, 1894; [11] "Brit. Med. Journ.," Feb. 17, 1894; [12] Ibid., April 28, 1894; [13] "Therap. Gaz.," Feb. 15, 1894; [14] "Lancet" July 21, 1894; [15] "Lancet," Feb. 10, 1894; [16] Ibid., May 25, 1894; [17] "Przeglad Chirurgiezny" and "Lancet," Aug. 4, 1894; [18] "Wien. Med. Woch.," No. 2, 1894; [19] "Brit. Med. Journ.," Oct. 20, 1894.

JAUNDICE.

Synopsis.—(Vol. 1894, p. 384.) Oil of Turpentine.

JOINTS (Arthritis),

Synopsis.—(Vol. 1894, p. 392.) Injections of Copper Phosphate; 2 solutions are used: (1,) Crystallized Sodium Phosphate, 5 parts, dissolved in mixture of Glycerine and Distilled Water, each 30 parts; (2,) Copper Acetate, 1 part, dissolved in Glycerine and Distilled Water, each 20 parts; mix and shake before using. Inject a syringeful under antiseptic precautions and seal the wound with Collodion. For hydrarthrosis of knee, frictions with the following; R Lanoline, gr. 60; Dermatol, gr. 15; Tincture of Iodine, gr. 10; Ess. of Wintergreen, gr. 5; M. Rendu injected Corrosive Sublimate, 4 to 1000, after aspirating and removing pus from joint.

KIDNEY (Surgery of the). *E. Hurry Fenwick, F.R.C.S.*

The effect of Chloroform Narcosis upon the Kidneys.—Rindskopf[1] remarks that any acute damage to the internal organs as a consequence of chloroform inhalation has hardly been looked for in man. From a review of the experimental evidence he shows that chloroform, however administered to animals, has a profound influence upon the the organs, chiefly in the shape of degenerative changes. In fatal cases of chloroform narcosis in man, a necrosis in the cells of the liver, kidneys, and heart has been found by Fraenkel and one or two others. Clinically an investigation of the urine has seldom been made. Luther[2] found albumen and casts in the urine in some cases, but the author does

not agree with him that the urine remains normal when there are no after effects of the chloroform. Rindskopf has examined the urine in one hundred cases before and after the narcosis. Out of the one hundred cases, ninety-three were available for the purpose in hand, and in thirty-one of these positive results were obtained. Albumen was found in six, albumen and cylinders in six, cylinders in nineteen, cylindroids in four, leucocytes in twenty-one, various epithelial cells in nineteen, and erythrocytes in six, but the latter were probably not due to the chloroform. The albumen was present only in traces, and disappeared by the third day. Neither the character of the operation, nor the taking of the anæsthetic badly, nor the two kinds of chloroform (officinal or Pictet's) used, seemed to have any influence, so that the real (chemical) agent was the chloroform. This idea is also confirmed by experiment and by morbid anatomy. The duration of the narcosis and the amount of chloroform used were important factors. In the thirty-one cases, the average duration and amount were 69 mins. and 31·5 g. respectively, as against 40·5 mins. and 26 g. Which of these two factors is the more important is doubtful, but the author would think that the amount should be put first. He draws the following practical conclusions: (1.) That the urine should be examined before and after the narcosis, and prudence exercised in using chloroform in renal disease; (2.) That the amount of chloroform given should be limited by using the method of permanent dropping (drop bottle); (3.) That the chloroform narcosis should be, even where it cannot be done without, limited in duration as much as possible; and (4.) That chloroform should not be administered to the same individual at an interval of one or even more days, lest the kidneys, already slightly damaged, should lead to a fatal result.

Wunderlich[3] has examined the urine in one hundred and twenty-five cases before and after anæsthesia. He makes the following deductions: (1.) An already existing albuminuria is often increased by etherization; (2.) Albuminuria can be caused by the exhibition of either ether or chloroform, but more often with chloroform; (3.) Casts appear in the urine more often after chloroform than with ether, the proportion being 34·8 to 26·4; (4.) When casts are already present both anæsthetics have the power of increasing the number.

Dr. W. W. Russell[4] examined two hundred cases for casts, with the following results:—

5	cases	contained	hyaline	casts	before	operation.
5	,,	,,	granular	,,	,,	,,
18	,,	,,	hyaline	casts	after	operation.
11	,,	,,	granular	,,	,,	,,
2	,,	,,	blood	,,	,,	,,

In 23 per cent. of the two hundred cases albumen was found before the operation, and 33 per cent. albumen was found after the operation. In 10 per cent., the albuminuria was therefore due to the operation.

Operative Proceedings in advanced Age.—Dr. Gibson[5] writes on the important subject of the effect of operations upon persons of advanced age. He finds that 50 per cent. of the patients after seventy years of age die after operation from uræmia. Death from uræmia occurred not earlier than the eleventh day and not later than the thirty-second. The average day was the fifteenth day, a day of some prognostic importance. On closer examination of his statistics the following important fact is brought out very clearly, viz., that the mortality of operations in old age follows upon procedures attacking the genito-urinary system, and that all other operations undertaken at the said age have only a mortality of 4 per cent. due to uræmia, and 20 per cent due to all causes. Moreover, if a critical examination is made of the cases of operations upon the bladder and urethra the mortality will be found to be very great. Thus, there were seventeen cases of urinary operations with eight deaths, six of these being due to uræmia. Hence, 25 per cent. of all cases were urinary, and operation yielded 43·75 per cent. of the total mortality. Dr. Gibson notes that iodoform has been found especially deleterious in advanced age. Where there is no actual suppuration it should give way to dressings sterilised by heat alone. He considers that the vague complex of symptoms known as iodoform poisoning has often been ascribed to uræmia, the two conditions masking or accompanying each other. He lays stress upon the valuable hint of renal inadequacy afforded by a pale and pasty countenance, a persistently contracted pupil, marked arterial tension, unexplained gastric irritability, and a very dry skin. His tables show that ether was used exclusively for general anæsthesia, and the question arises whether ether could have been replaced to some advantage by chloroform.

Nephrorrhaphy.—McArdle raises a warning note against the *intra*-renal anchoring of sutures in nephrorrhaphy. Barth[6] showed a specimen of a kidney containing a necrotic centre; it was produced by the occlusion of one of the arterial arches by the anchoring suture. A similar condition has been noted as the result of puncture. One of the large arteries was obstructed, hæmorrhagic infarction took place, and ultimately necrosis.

Sarcoma of the Kidney in Infants.—Contrary to the opinion generally accepted that sarcoma of the kidney in children is inoperative, Dr. Abbe,[7] of New York has published a series of three cases in which

large tumours 2¼ lbs. to 7½ lbs., were removed from children fourteen months to two years old, with perfect recovery and perfect health in each case for a year. In both instances a transverse incision was employed, the child being in the Trendelenburg posture. The second case, that in which a growth of 7½ lbs. was ablated from an infant weighing 15 lbs. is most interesting, for the growth was found to have affected a narrow layer of the upper end of the kidney. Critical examination showed that it was possible to leave a large part of the kidney. The tumour and one and a half inches of kidney was therefore amputated, and the kidney stump was sutured and replaced in loin. The greatest care was given to sustaining the child's heart action by maintaining the inclined position, not only throughout the operation but continuously for the succeeding day or two, the body being kept at an angle of thirty degrees. The added security due to keeping the limbs swathed in cotton, to the liberal use of hot water bottles, to occasional hypodermics of brandy and strychnine, and to enemata of hot black coffee, brought the child through. Commenting on these cases Abbe says, "The Trendelenburg position will be found as great an aid in renal as in pelvic surgery, for it checks the profuse venous hæmorrhage, and the position gives natural drainage of the tumour itself before removal."

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LABOUR.

Van Waters[1] remarks that the beneficial action of a suppository in the rectum in cases of constipation is widely known. He asks: Why should not the same good result follow the use of a suppository in uterine inertia, and what more ready and effective suppository could we have than the hand? Hence, when the case has so far progressed that we are satisfied that it is time for delivery to take place, and yet inertia has supervened, the hands should be rendered thoroughly aseptic by the use of water, soap, and a brush, and afterwards a creolin solution. Then, after the administration of a little chloroform, the hand, well anointed with vaseline, should be gradually and slowly introduced into the vagina. As soon as it has remained there a few moments pains will commence and increase in severity, in some cases to such an extent that the hand has to be withdrawn. In

the cases in which Van Waters has resorted to it the results have been gratifying.

Markoe [2] practises a modified form of Crede's method of removing the placenta. To accomplish this successfully and with the least discomfort to the patient, three things are necessary: First, the patient must relax the abdominal walls as much as possible. Second, the uterus must be firmly contracted. Third, the axis of the uterine canal must be made to conform to the axis of the vagina. If these three essentials be present and the placenta is not absolutely adherent to the uterine wall, the expulsion can be accomplished with two fingers and but little effort.

"As in all obstetric operations, before proceeding the bladder should be emptied, especially in this manipulation, as a distended bladder forces the uterus upward and prevents the easy handling of the uterus. Then, standing at the side of the patient, her knees being drawn up, one hand grasps the fundus through the abdominal wall and ascertains the precise direction of the uterine canal. This being known, all that is necessary to bring the axis of the uterus in line with that of the vagina is to gently press the fundus backward toward the promontory of the sacrum, thus throwing the cervical portion of the uterus forward. The obliteration of this angle reduces the resistance to the minimum, thus diminishing the force requisite to accomplish the expression. The next step is to direct the pressure upon the fundus in the direction of the vagina, care being taken that it be kept well back, in order that the angle may not recur. If this is properly carried out, the placenta is received in the other hand at the vulva."

REFERENCES.—[1] "Brit. Med. Journ."; [2] "New York Med. Journ.," March 17, 1894.

Synopsis.—(Vol. 1894, p. 400.) Draper commends Wine of Ipecacuanha to induce labour pains, giving 15 drops at a dose. Introduction of disinfected hand into vagina to overcome uterine inertia.

LARYNGITIS (Chronic). *Greville MacDonald, M.D.*

It may be thought that so simple an affection as this can afford no new information, such as would be of service to readers of the "Medical Annual." But we are daily becoming more conscious of the dangers arising from increased familiarity with the objective features of disease, and this not only among specialists, but even among the general practitioners. In making accurate diagnosis of the actual condition of the larynx in a case of chronic or frequently recurring hoarseness, we are in danger of taking it for granted that the local condition represents the whole of the trouble, and to act as though local treatment were all

that is required. So that I would venture to insist at the outset of my remarks upon the fact that probably we never have a chronic inflammation of a mucous membrane without some general condition that will account for the patient's inability to throw off the acute attack; the only exception being where the mucous surface is exposed to continual sources of irritation, as in those working in a dusty atmosphere; or where the mucous membrane is systematically abused, as in the faulty voice production of ritualistic clergymen, music-hall singers, and elementary school-teachers.

Chronic laryngitis is in young men frequently attributed to the breaking of the voice which occurs at puberty, and is especially observed in those who suffer from spermatorrhœa. Unless carefully treated at this period, both constitutionally and locally it is very prone to become inveterate, and to last the patient for the remainder of his life. Then it is occasionally observed in tuberculous subjects, and may sometimes be regarded as a precursor to lung disease, although not nearly so frequently as is maintained by some physicians. And here we must be sure of drawing a sharp line of distinction between chronic laryngitis in a subject with a tuberculous tendency and the early stages of tuberculous laryngitis. The former presents no characteristics different from those of ordinary chronic laryngitis, while the latter has a great tendency to be accompanied by the local anæmia which is so characteristic, and to a degree of dysphonia out of all proportion to the actual objective evidence of inflammation. Of course in later stages we have more characteristic indication of the severity of the disease, in the form of ulcerations on the posterior wall, œdema, etc.

TREATMENT.—The local treatment of chronic laryngitis depends upon the degree of hyperæmia, the amount of hyperplasia, and the sensitiveness of the patient to fresh attacks of inflammation. We rely for the most part upon astringents, as distinguished from steam inhalations which are so useful in the acute or sub-acute attack. Where there is very great hyperæmia and a good deal of expectoration, weak astringent sprays are exceedingly useful, and sometimes are sufficient to cure cases of long-standing. The best of these are **Perchloride of Iron**, 3 to 8 grains to the ounce of distilled water, or **Chloride of Zinc**, 2 to 5 grains to the ounce. In the more chronic cases where there is much hyperplasia, the weak astringents are not so useful: and then we use the strong astringent paints, such as the perchloride of iron, ½, 1, or 2 drachms to the ounce. This should not be applied oftener than twice a week, and the voice should be kept at rest during the course of treatment, which may extend over a

period of six weeks or more, the intervals between the applications gradually increasing. Where the patient is extremely susceptible to attacks of fresh cold, steam inhalations may be used often with great advantage, although it must be remembered that such treatment if continued too long is apt to aggravate the susceptibilty. The **Vapor Pini Sylvestris** and the **Vapor Cubebæ** of the Throat Hospital Pharmacopœia, are among the most serviceable.

LARYNX (Stenosis of the). *Greville MacDonald, M.D.*

Although stenosis of the glottis must be considered merely as a symptom, yet it will prove profitable to consider it as a condition *per se*, since so many different diseases are accompanied by it, while it is altogether the most important abnormality with which the laryngoscope has to deal. One may even say that the correct diagnosis of the various forms of narrowing of the glottis alone would justfy, if not necessitate, special skill in the use of the laryngeal mirror.

It is scarcely necessary to say much about the symptoms, as these are familiar enough to every one. But it is desirable to draw a distinction between laryngeal stenosis and constriction of the trachea or large bronchial tubes ; for sometimes when a patient is *in extremis* it is not easy to discriminate, and a tracheotomy may be uselessly performed when a little more care would have discovered the impediment to be lower in the air passages than the glottis. In the first place, in laryngeal stenosis the larynx at each inspiratory effort sinks considerably towards the thorax, a point familiar enough as one of the more serious difficulties in tracheotomy. Indeed the external, supra-glottic, atmospheric pressure may be sufficient to drive the larynx almost beneath the sternum. On the other hand, if the seat of obstruction be lower down in the trachea the line of separation between the thoracic vacuum and the external pressure will likewise be below the larynx, and the latter will not descend to any material degree. Again, in laryngeal obstruction the head is generally thrown slightly backwards, whereas when it is tracheal or bronchial the tendency is to stretch the head forwards. The stridor is different in character in the two cases. The noise produced by the vibrating vocal cords during inspiration is necessarily louder than that due to the rushing of air through a constricted tracheal passage. The laryngeal stridor is described as being metallic in its ring, whereas the inspiratory sound of tracheal stenosis is rather hissing or wheezing. The voice is usually considerably different in the two cases. In laryngeal stenosis it may be scarcely affected ; it may be loud and hoarse ; the patient may be completely aphonic ; or it may in certain cases, possess the character known to specialists as phonative waste of breath, that is

Fig. A

Acute Œdema. Oss Laryngitis.

Fig. B.

Sub-glottic Œdema.

Fig. C.

Acute Perichondritis.

G. M[illegible] del.

Abscess of the Right False Cord and Sub-glottic Swelling.

Donaldson & Co. Chromo-lith. Edinburgh

to say, a greater or less proportion of the voice-producing breath passes through the glottis without enforcing any vibration of the cords. The phonative waste occurs in any case where, even though there be co-existing narrowing of the glottic space, the cords for one reason or another cannot be properly approximated. But when the stenosis is situated lower than the larynx the voice is in no way altered in character, being only weakened from the small current of air that can pass the constriction.

Stenosis of the larynx may occur from either intralaryngeal or extralaryngeal causes, the former being of the greater import. They may be divided into those conditions which arise from some alteration in the laryngeal structures, and those which are produced by paralysis or reflex irritation. The former may be further divided into (*a*,) Alterations resulting from inflammation; and (*b*,) Those which are due to the presence of new growths:—

(*a*,) In the first place acute inflammation may be accompanied by so much œdema that the glottis, or perhaps only the space above, may be completely obliterated (See *Fig. A*, *Plate XV*). We may have so much swelling of the epiglottis or arytenoid cartilages that the upper openings of the larynx are completely obliterated. Again, the inflammatory swelling may be confined to the subglottic region altogether; and although there may be but little sign of inflammation in the supra-glottic region, yet the lower surface of the vocal cords may be so swollen with œdema as to produce complete stenosis. To understand this it must not be forgotten that the cords during approximation do not project like two shelves, but rather like two wedges, the apices of which are the vibrating margins. In other words, the lower surface of each cord does not look downwards, but downwards and inwards. And it is this swelling of the subglottic portion of the cords which may produce such serious interference with respiration as to necessitate tracheotomy (*Fig. B*, *Plate XV*). According to some this is especially liable to occur in the case of children, while we find it not infrequently in less degree in the chronic laryngitis of adults. But the more typical œdema of the upper portions is usually found in conjunction with syphilitic ulceration, malignant disease, and phthisis; while it is more rarely observed as the result of simple acute inflammation, and then is usually a consequence of scald. Although not directly due to inflammation I may yet refer in this place to a rare sequela of an inflammatory, possibly always diphtheritic sore throat, viz., bilateral paralysis of the abductors of the cords (*Fig. F*, *Plate XVI*). This appears to be due to an affection of the muscles themselves, which lying immediately

beneath the mucous membrane of the posterior wall of the larynx would appear to become inflamed with it and thus to lose, once and for all, their power of contraction. In such a case the prognosis would be extremely grave so far as the question of the ultimate removal of the tracheal cannula was concerned ; whereas the prognosis of acute œdema from the same point of view is eminently good. But the simple œdema will generally be successfully combated, especially when the diagnosis is made in an early stage, by scarification with a guarded laryngeal lancet, and by the discontinuing of all steam inhalations and the substitution of ice continually dissolved in the mouth, but not applied to the neck for fear of the shock increasing the narrowing of the glottis by reflex action. But where the symptoms steadily progress in spite of such endeavours, either tracheotomy or intubation, of which more presently, should be performed before the patient is fighting for his breath. Perichondritis may also produce such an amount of swelling of the intralaryngeal structures as to encroach seriously upon the glottis. We find it occasionally so in the acute exanthemata, *e.g.*, typhoid and small-pox, while of late years I have observed it occasionally in the course of influenza. I have also good reason for stating that it may occur as the result of simple inflammation, although this is strenuously denied by some authorities. But undoubtedly it is most often seen as the accompaniment of malignant disease, syphilis, and phthisis. Briefly speaking, whenever with all the indication of acute inflammation, we find an asymmetrical encroachment upon the middle line of the true or false cords, or a unilateral tumefaction of the arytenoid or aryteno-epiglottic fold, we may suspect a perichondritis, which deep-seated inflammation may in rare cases terminate in abscess (*Fig. C, Plate XV*). In simple perichondritis the treatment must be conducted upon general principles—especially leeches externally, and ice slowly and frequently swallowed. I believe I have good reason for maintaining, as the result of clinical observation, that **Sulphide of Calcium**, in $\frac{1}{8}$-grain doses, has a decidedly beneficial effect ; while, should there be either œdema or abscess, the laryngeal lancet will give immense relief and save the patient from the greatly dreaded tracheotomy. A syphilitic gumma, and occasionally a malignant growth may simulate a simple perichondritis ; but the history and careful watching of the case will generally save one from error. But when perichondritis is an accompaniment of syphilis or other specific disease there will generally be definite evidence of the co-existence of such. Apart from this association extensive syphilitic disease could hardly encroach upon the passages, unless a gumma were responsible. But in the later stages, where the deep ulceration

Fig. D.
Papilloma of Larynx.

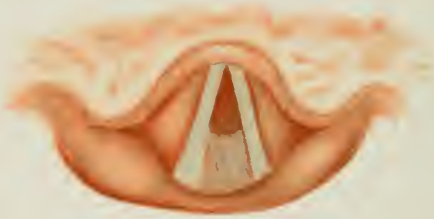


Fig. E
Subglottic Web.

Fig. F.
Bilateral Abductor. Paralysis of the Cords.

G. Meb. del

Faulelsson & Co., Chromo lith., London

of tertiary syphilis has undergone cicatrisation, the contraction of the resulting cicatrix may lead to the development of a web stretching across various parts of the laryngeal cavity, and, increasing in its contraction, may so draw the mucous membrane to which it is attached towards, and even beyond, the middle line as to impede seriously the respiration (*Fig. E, Plate XVI*). It is only with the laryngoscope that such a diagnosis can be made. A similar web may rarely be observed with the laryngoscope in the trachea proper; in which case the symptoms would be distinctly different from those of laryngeal stenosis, as already remarked. New growths are among the most frequent causes of obstruction in the larynx. In children and even infants, papillomata are not uncommon (*Fig. D, Plate XVI*), although they are not often of such extent as to cause any symptoms of dyspnœa. In these cases the voice is necessarily destroyed to a greater or less degree; and impeded laryngeal respiration with grave hoarseness or aphonia generally means in the child a benign growth in or about the cords. In adults malignant growths are more common, especially after middle life. Here the voice may or may not be materially affected, while there may be pain on swallowing, shooting into the ear on the affected side, and, in the later stages, infection of the glands in the neck. But it must be remembered that both the latter symptoms may not present themselves till a very late stage. So far as one can express the points of laryngoscopic diagnosis in a few words, it may be said that the chief indications of malignancy are, obvious implication of the deeper structures, impaired mobility of the cord on the side affected, ulceration of the tumour or in its immediate neighbourhood, and rapidity of growth. But no diagnosis is usually easy in those stages when respiration is much impeded. Finally, while speaking of new growths, it must be mentioned that tuberculosis of the larynx very rarely may give rise to so much narrowing of the glottis that respiration is gravely hampered. But although œdema of the arytenoids and epiglottis may be present to an exaggerated degree, it is seldom so intense as to necessitate a tracheotomy. The cases in which such operation may be called for are usually those of subglottic œdema, tuberculous neoplasms of the cords, or myopathic paralysis of one or more muscles. But so far from tracheotomy being a common operation in this most distressing disease, the reverse condition is very often observed, viz., great distress from inability to cough and expectorate, owing to the abnormal patency of the glottis due to destructive ulceration of the cords. Where stenosis of the larynx is due to tuberculous tumours or papillomata, relief can be often afforded by intra-laryngeal operation. Finally, we have to bear in mind the possibility of the stenosis

being due solely to spasm of the adductors, paralysis of the abductors, or the association of both of these on opposite sides. As is generally known, pressure on the trunk of the pneumogastric nerve, or in the course of the recurrent laryngeal, often induces paralysis of the abductor of the same cord, as one of the earliest symptoms. This in itself is never sufficient to impede respiration to a recognisable degree ; but it is occasionally associated, more especially when the pressure is on the trunk of the pneumogastric, with attacks of spasm of the adductor of the opposite cord : and thus, even in the case of an aneurism, it may become necessary to perform tracheotomy for relief of the urgent symptoms of laryngeal stenosis. As has already been mentioned, after inflammatory affections of the throat, we occasionally have a bilateral paralysis of the posterior crico-arytenoidei or abductors, in which case operative relief may be suddenly called for, and a tube may have to be permanently worn.

Among rarer causes of laryngeal stenosis it must be remembered that foreign bodies, such as a coin or a denture, may be lying between the cords ; while we must also bear in mind that extra-laryngeal growths or pharyngeal abscess may produce all the gravest symptoms of laryngeal obstruction.

The subject of laryngeal stenosis can hardly be left without referring to the fact that in appropriate cases intubation with O'Dwyer's tubes is rapidly gaining the confidence of the profession in this country ; while in its home it has so far established its reputation that the rival merits of tracheotomy and the less formidable operation have become matters of almost household interest. The recent discussion on the subject at the Bristol Meeting of the British Medical Association placed the matter before us in a very forcible manner, thanks to the extremely able paper of Dr. William P. Northrup, of New York. He gave it as a rule for the employment of O'Dwyer's tubes that whenever "a progressive, unremitting dyspnœa, despite all previous treatment, allows any considerable part of the posterior portion of the lungs to become non-inflated, when the laboured breathing begins to produce sensible exhaustion, intubation is to be performed promptly." Details of the operation have been given in a previous volume of the "Annual," and it is not necessary to repeat them here. The dangers to life are *nil* in an experienced hand, and a very little practice on the cadaver will make the operation easily and quickly performed. But to the inexperienced, and more especially to those (unfortunately only too many) whom nature never intended to handle any instrument more dangerous than a stethoscope, there are certain risks which should be well realized when discussing the relative merits of trache-

otomy and intubation. These are briefly, asphyxia from prolonged and unsuccessful attempts, laceration of soft parts, and false passages. The danger of pushing down false membrane and thus blocking the lower orifice of the tube is, according to Dr. Northrup, extremely small, although the explanation usually given to the two accidents just mentioned is that the membrane has been thrust down. The indications of a detached piece of membrane acting like a valve over the lower opening of the tube are, again quoting Dr. Northrup, (1,) Croupy character of the cough, the tube being in; (2,) Tapping sound; (3,) and most important, Sudden obstruction to out-going air, especially during coughing. But for those who have not yet gained practical experience in the operation, we cannot do better than refer them to Dr. Northrup's most admirable and helpful paper.

Synopsis.—(Vol. 1894, p. 403.) R Iodoform, gr. lxxv; Powdered Phosphate of Lime, ʒijss; Powdered Boric Acid, ʒj; Menthol, gr. v; M. *Sig.*—Morning and night insufflate into larynx in cases of laryngeal phthisis. R Menthol, gr. vijss–xij; Balsam Peru, gr. lxxv–cl; Sp. Vini. Rect. ʒiij–ʒss; Aquæ dest, Oiijss. *Sig.*—To be used as a spray. R Pot. Phosphatis, ʒijss; Iodoformi, gr. lxxv; Acid Boric, ʒss; Menthol, gr. vj–xij. *Sig.*—As an insufflation in phthisis of larynx. **Inhalations**, preferably that of **Peruvian Balsam**; sprays of opiate and phenolized preparations; insufflations of powders are all much used. **Sedative Swabbings** are useful for dysphagia. **Lactic Acid**, 20 to 80%, applied after **Cocainization** for tubercular ulcers. Intra-laryngeal injections of **Creasote** or **Menthol**. Injections of **Cocaine** are better than swabbing. **Galvano-cauterizations** for ulceration and infiltration.

LEPROSY.

T. Colcott Fox, M.B.

Kalindero[1] employs with success the following diagnostic procedure. After washing the part with 1 in 1,000 **Sublimate Solution**, left in place for seven to eight hours, he applies a blister over the trajectory of one of the radial, cubital, or median nerves, in whose territory there are trophic troubles. Then the blister is cut, and after washing with a solution of **Boric Acid** (4 per cent.), a gauze dressing, soaked in a similar solution, is made. The next day, the blistering agent is applied again for seven to eight hours, and the dressing made in similar fashion. The third day, and the fourth day, again, the blistering is repeated, and in the *pus* leprosy bacilli begin to make their appearance. A vaseline dressing interferes with the success.

We know the errors that have been committed in the differential diagnosis of nerve leprosy and syringomyelia, and Pitres and Sabrazès[2] insist on the value of a bacteriological examination. They made an incision of six centimètres along the radial border of the forearm in an anæsthetic region, parallel to a branch of the musculo-cutaneous nerve felt under the skin. The nerve was found, and a piece cut out.

Less certain and more variable diagnostic points are derived from the former residence of the patient, the age at onset, the existence of cephalic symptoms, the deviation of the spine, thickening of nerves, and the existence of large hyperæmic macules with altered sensation.

Danielssen[3] reports some results of his experience in the treatment of leprosy. Unna's treatment with **Ichthyol, Chrysarobin,** and **Salicylic Acid** and **Creasote** causes nodules and infiltrations to disappear, whilst the general health improved. Unna's *cured* case died later on a leper. However, Dreckmann and others have been favourably impressed with this treatment.

The venerable Danielssen points out that numerous methods will cause disappearance of the eruptive features, such as energetic washings with **Phenic Acid,** rubbings with soft soap, the stimulating gurgun and other oils. So also intercurrent febrile maladies clear them off for the time, but do not cure the leprosy. Danielssen has treated thirteen cases by the **Unna-Dreckmann Method,** but has not cured them. **Hydroxylamine** (½ to 2½ grammes in 20 per cent. glycerine and 80 of alcohol, and 2 per cent. ointments) proved unsatisfactory.

Subcutaneous injections of **Europhen** gave no result. The action of **Aristol** is said to be identical with that of **Iodide of Potassium.**

REFERENCES.—[1]"Ann. de Derm. et de Syph.," Jan. 1894; [2]"Nouvelle Icon. de la Salpêtrière," 1893; [3]"Archiv. f. Derm. v. Syph.," 1893.

Synopsis.—(Vol. 1894, p. 405.) Tubercular leprosy will disappear under persistent irritation, *e.g.*, from rubbing with **Carbolic Lotions, Soft Soap, Irritating Oils,** etc., but soon re-appear. Carreau gave **Chlorate of Potash** in heroic doses (150 to 300 grains daily for three days), but symptoms of poisoning developed. **Europhen,** 5% emulsion, locally, gave good results.

LICHEN PLANUS.

T. Colcott Fox, M.B.

The subject of hydrotherapy in dermato-neuroses continues to be studied in France.

E. Vidal first made use of **Temperate Douches** of light percussion directed for three to six minutes upon the sides of the vertebral column, in order to combat the reflex excitability of the spinal cord, to which he attributed certain functional or trophic troubles of the skin. This procedure was modified by Jacquet, and then by Brocq. Now, Beni-Barde has also been successful with this treatment in lichen planus, two cases of chronic circumscribed neuro-dermitis, chronic lichen simplex of E. Vidal, prurigo, and generalized eczema. The temperate douche varying from 33° to 38° C., according to the subject, and moderately percussive, agrees best with the majority of patients affected with dermato-neuroses. One a day is given in cases of

moderate intensity, two daily when the nervousness is very well marked, more frequently even, if needs be, if the exasperation becomes extreme.

Cold douches must be used with the greatest circumspection, otherwise more harm than good ensues.

REFERENCE.—[1] "Brocq's Letter, "Journ. Cut. and Gen.-Urin. Dis.," Jan., 1894.

LIVER (Cirrhosis of).

Synopsis.—(Vol. 1894, p. 406.) ℞ Hippuric Acid, 25 grms.; Lime Water, q.s. to neutralize; Simple Syrup, 500 grams.; Syrup of Lemon, q.s., M; *Sig.*—4 to 6 dessertspoonfuls a day to combat congestion. Copaiba, 4 grms. daily as diuretic; Purgatives carefully employed. Iodide of Potassium, 2 to 4 grms. per day with Milk Diet. Calomel, 3 grm. doses thrice daily as diuretic, together with a gargle of Potassium Chlorate. Succus Taraxaci in large doses with Tincture of Nux Vomica for hepatic congestion.

LIVER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Cystic Degeneration of the Liver.—Dr. John B. Roberts[1] reports a case of enormous enlargement of the liver in a woman aged fifty-six, due to the formation of cysts of various sizes in the hepatic substance. At the operation, the abdomen was opened over a prominent cyst, the wall of which was then sutured to the edge of the abdominal wound. Seven days later the cyst was opened, and through this some eight or ten smaller ones were also drained. The patient died three weeks later, quite suddenly. At the post-mortem the liver was found greatly enlarged, weighing 11½ lbs., and riddled with cysts. No echinococcus hooklets could be detected microscopically, and the fluid contained albumen. Both kidneys were enlarged and cystic. In last year's "Annual" we referred to a somewhat similar case in a child, the liver being enormously enlarged and filled with cysts, the fluid from which contained albumen, but no hooklets. Hepatotomy so far relieved that the child was removed to its home after a few weeks, but on enquiry at the address given the family had removed, so that the further history of the case remains in doubt.

We operated six months ago in a case of liver disease, the nature of which must, we fear, remain doubtful, as the patient is now apparently well. The patient, a man of fifty, was admitted to the Infirmary with an enormous liver and gradual failure of health, without jaundice. Hepatotomy was performed, and several pints of pultaceous material of the consistence of thin putty were removed by means of a lithotomy scoop—in fact, such was the quantity that it seemed as if the whole of the interior of the liver had been cleared out, leaving a thin

shell of liver tissue ; yet there must have been left sufficient hepatic tissue for the purposes of life, as the patient not only recovered from operation, but gradually regained strength and health.

Under the microscope, the material looked like broken down liver substance. There was no history of syphilis.

Hydatids.—J. Ross,[2] in a paper read at the Rome Congress, gives an account of thirteen cases of hydatid disease of the liver.

He divides them into three sets :—

(1,) Those springing from the posterior, superior, or antero-superior aspect (eight cases).

(2,) From the inferior aspect (four cases).

(3,) Intrahepatic (one case).

Three cysts on the superior aspect, four on the inferior, and one intrahepatic cyst were operated upon by Volkmann's method.

In two cases in which the cyst was situated on the superior aspect of the liver, the pleural cavity was opened, and the cyst evacuated by going through the diaphragm ; they made rapid recoveries. Whenever a cyst was located on the convexity of the liver, nerve-pressure symptoms were present, and sometimes were the only discomfort complained of by the patient.

The author advocates Volkmann's method, since skilled assistance is not required.

Dr. Wm. Gardner[12] also recommends Volkmann's method, with iodoform gauze plugging where skilled assistance cannot be obtained, but where it can he advocates stitching the cyst to the parietal peritoneum and emptying it by thorough douching.

J. Israel[3] reports a case of extirpation of a primary sarcoma of the liver in which the patient, aged fifteen years, died of numerous metastases three months after operation. The large tumour was removed by the cautery-knife, and hæmorrhage was arrested by pressure with gauze.

He has operated on six cases of syphilitic tumour of liver, with two deaths.

He considers that a single operation, either with the extraperitoneal treatment of the liver wound, or with the use of the tampon, is best, and in this we feel sure he will be supported by the greater number of experienced surgeons.

Etiology of Hepatic Abscess.—On this subject somewhat contradictory views are expressed by different observers.

Dr. S. J. Rennie[4] (A.M.S.) writes : "During the past eighteen months seven cases of hepatic abscess have come under my care, and in no single instance was there any history of dysentery, though the most careful

and searching inquiry was made in each case. I may say that my own experience, extending over nine years in the tropics, has led me to believe that hepatic abscess is in no way necessarily associated with, or the result of, previous dysentery."

Dr. Cayley, in his "Hygiene and Diseases of Warm Climates," says: "We seldom meet with cases of hepatitis or liver abscess in total abstainers, except the pyæmic form directly associated with dysentery."

Neil McLeod[5] holds that tropical liver abscess (and by this is meant cases in which the suppurative process is not the result of a general pyæmia, or connected with gall stones, hydatids, or operative procedure on the large bowel) is the result of dysenteric ulceration.

Drs. Patrick Manson and James Galloway[6] report a case of abscess of the liver, the pus from which contained living amœbæ, supposed to be amœbæ coli, in large numbers.

Dr. Manson remarks the following peculiarities of tropical liver abscess:—

(1,) In a large proportion of cases the contents are not pus in the true sense of that word; they consist principally of blood, detritus of liver tissue, a mucoid material, and usually only a very small proportion of pus proper.

(2,) There is no well-defined abscess wall, nor extensive infiltration of leucocytes in the surrounding and still living tissues, *i.e.*, there is no tissue reaction as from action of pyogenic micro-organisms.

(3,) The pyogenic bacteria are usually entirely absent.

He then asks: Are we not justified in regarding the peculiar structure and contents, the absence of pyogenic bacteria, and, in many instances, the presence of amœbæ, not only in the contents, but in the walls of liver abscess, as being in all probability correlated circumstances? He suggests that these amœbæ are the cause of hepatic abscess, that preying on the liver tissues they give rise to the characteristic purilage; the more so as they are well known to exist in the bowel in dysentery.

That many abscesses of the liver are secondary to bowel trouble no one can doubt, nor can it be doubted that hepatic suppuration may occur as a primary affection as the result of one or other form of hepatitis, but the amœboid theory of causation is by no means proved yet, and requires elucidation.

Resection.—Tricome[7] reports a successful case of resection of the whole of the left lobe of the liver for a tumour which was afterwards found to be a tubular adenoma, having its origin in the bile ducts.

At the International Congress at Rome, Ceccherelli and Bianchi

described a new method of arresting hæmorrhage from the liver. The portion of the liver that it is proposed to excise is circumscribed by two strips of whalebone, each perforated from end to end by several holes. A long needle, armed with a double thread, is passed through the hole at one end of one strip of whalebone, through the liver structure, and then through the corresponding end hole of the other strip. Other ligatures are passed through all the other holes in both strips, and through the intervening portions of liver. One of the ends of the first ligature is tied to the cut end on the opposite side, and then all the ends are closely tied together along the whole length of one strip of whalebone, and afterwards along the second strip. In this way the intervening liver tissue is closely constricted and gradually crushed, and the isolated portion may be freely incised without dread of hæmorrhage.

Zeidler,[8] discussing wounds of the liver, remarks the very slight tendency of hepatic hæmorrhage to spontaneous arrest. In these cases after laparotomy, suture of the liver, Pacquelin's cautery and the tampon are available. The blood pressure in the liver is very low, hence arrest of hæmorrhage can surely be obtained by the tampon.

Mr. F. Treves[9] reports a case of suppurative pylephlebitis following an attack of perityphlitis due to constipation and the consumption of indigestible food. Laparotomy was performed on the thirty-first day of illness. "The liver was remarkable, it was considerably and evenly enlarged. It projected at once into the wound, and extended one and a-half inches or more below the margins of the costal cartilages. So far as its surface could be examined, no adhesions were discovered. It was normal in colour, and felt to the touch almost as soft as lung. The loss of its normal firmness was very striking. All that part of the surface of the liver which was exposed by the operation was dotted over with minute yellow specks. They were perfectly round, and were comparable in size to the holes made in paper by the prick of an ordinary pin. They were to be seen, but not felt." The patient's recovery was rapid, uninterrupted, and complete, though nothing beyond exploration was attempted.

Mr. Treves also reports a case of recovery from the plastic form of the disease after laparotomy.

It is difficult to say whether these cases recovered in spite of, or as the result of, treatment, as beyond the exploration nothing whatever was done. If cause and effect are argued for, they would serve as good illustrations of the curative effects of laparotomy *per se*, and would encourage one to advise exploration in some otherwise hopeless cases.

Hydatid of the Liver simulating Gall Stones.—Dr. R. Stewart[10] re-

cords a case of this kind. A lady of thirty-eight had several attacks of paroxysmal pain in the region of the gall-bladder, accompanied by jaundice, between 1890 and November 19, 1892, when the abdomen was opened. A hard rounded swelling, about the size of a hen's egg, was found on the under surface of the right lobe of the liver, adherent to the gall-bladder. About half of it was embedded in liver tissue. The left lobe could be made out uniformly enlarged. No gall-stones were found on opening the gall-bladder, but on irrigation bile-stained daughter-cysts were washed out. As daughter-cysts continued to escape, the hard cyst was opened on December 2, and its contents cleared out. No communication with the gall-bladder could be discovered. The hydatid daughter-cysts caused the recurring attacks of colic, the pain being as severe as is that usually accompanying the passage of calculi. Dr. Stewart believes that in addition to the hard cyst undergoing calcareous degeneration, there was another cyst in the substance of the liver communicating with the hepatic duct. The patient entirely recovered.

Fixing a Displaced Liver.—Richelot[11] relates the case of a woman, aged twenty-eight, in whose right iliac fossa could be felt a painful floating tumour. The patient was seized from time to time with bilious vomiting and fever, so that she had to cease all work. Believing it to be a case of typhlitis, the author opened the abdomen and laid bare the tumour, which was found to be the liver, fixed by adhesions to the iliac fossa. The adhesions having been broken up, the liver was pushed up as high as possible and fixed. The result was very favourable; the patient suffered no more inconvenience, and could walk about with ease.

REFERENCES.—[1] "Annals of Surg.," Feb., 1894; [2] "Austral. Med. Gazette," July 15, 1894; [3] "Deut. Med. Woch.," Aug. 23, 1894; [4] "Brit. Med. Journ.," Aug. 25, 1894; [5] Ibid., March 31, 1894; [6] Ibid., March 31, 1894; [7] "Rev. de Chir.," May, 1894; [8] "Deut. Med. Woch."; [9] "Lancet," March 17, 1894; [10] "Pract.," Jan., 1894. "Australasian Med. Gaz.," vol. ii., pp. 302-303, 1893; [11] "Med. Press and Circular," July, 1893, "Therap. Gaz.," Nov. 15, 1894; [12] "Australian Med. Journ.," Aug. 20, 1894.

LOCOMOTOR ATAXY. *Allan McLane Hamilton, M.D., New York.*

Weiss[1] seems to have had unusual success in the treatment of a case of locomotor ataxia by the use of large doses of the **Iodide of Potash.** Doses of 8 grammes a day were given with an improvement in all the symptoms, and notwithstanding the fact that the patient took 500 grammes in one month no harm followed. The case was a well marked one in which the history of syphilis figured. There was much ataxia, crises, anæsthesia, and Argyll-Robertson symptom, and all of

these disappeared after four months' treatment, with an increase in weight. The special symptoms were meanwhile treated, the urethral crises and detrusory weakness being improved by the transverse galvanization of the lumbar cord and the hypogastric region, such treatment lasting five weeks. **Ergot** and **Strychnine** were given in small doses at the same time.

Stark[2] reports an old case of tabes which was very much improved by large doses of iodide of potash, the patient taking as much as 12 grammes daily, well diluted, a quantity which was subsequently reduced.

Hansall[3] discusses the possibility of the early diagnosis of tabes by the eye symptoms, and lays stress upon the superiority of the perimeter over the ophthalmoscope for that purpose. The atrophy of the optic nerve is believed to be a much earlier symptom of the affection than is ordinarily supposed.

Buzzard,[4] in comparing the ocular symptoms in disseminated sclerosis and tabes, is of the opinion that the atrophy and associated visual disorder is a far less serious condition than the former disease. He calls attention to its rapid progress in tabes, and describes the disc as "flat, dense and uniform, of a cold bluish-grey tint, suggesting the idea of its being painted in opaque oil colour, with a very few retinal vessels lying upon it, and a marked absence of any minute vascularity." He points out the fact that when atrophy of the optic nerve is of early occurrence in tabes, ataxia either does not occur or is but feebly expressed. Out of fifteen private patients of tabetic atrophy, only four presented characteristic ataxia, and in certainly three of these other symptoms of tabes, notably pains, had preceded the eye changes for several years.

Grasset[5] finds that the lightning crises of tabes are best relieved by the administration of 50 centigrammes of **Phenacetin** every half hour until 8 have been taken, but if the stomach rebels he gives **Phenocol** subcutaneously, or **Morphine** combined with **Atropia**.

REFERENCES.—[1] "Centralb. für die Gesammte Therapie," Heft 2, p. 65, 1894; [2] Jonlukan, Dicodecom, 8, 11 and 12, p. 230; [3] "Journ. of Nervous and Mental Dis.," p. 294, vol. xx, No. 4, 1893; [4] "Brit. Med. Journ.," Oct. 7, 1893; [5] "Journ. de Méd. de Paris," No. 48, 1893.

Synopsis.—(Vol. 1894, p. 409.) Hypodermic injections of **Phosphate of Soda**, 3 cubic centimètres thrice daily of a solution of phosphate of soda, 2 grms., in 100 grms. of laurel water. **Spermine** hypodermically. Frenkel's movement method.

LUNGS (Diseases of).

Synopsis.—(Vol. 1894, p. 411.) In œdema pulmonum stimulants are indicated, or subcutaneous **Camphor** injections ℞ Camph., grm. 1·0; Ol. Oliv., grm. 9·0. *Sig.*—1 to 4 ♏ injections. Digitalis in small doses, *e.g.*,

½ grm. divided into 150 portions if the condition has developed slowly. Acetate of Lead internally: R Plumb. Acet., grm. 0·05; Sacchari, grm. 1·0; M. *Sig.*—Ft. pulv. Dentur tales doses decem. One powder hourly. Vesicants to the chest. As an aseptic inhalation: R Essent. Terebinth., grms. 350; Ess. Lavender, grms. 100; Iodoform, grms. 10; Ether Sulph., grms. 20.

LUPUS ERYTHEMATOSUS. *T. Colcott Fox, M.B.*

Bulkley,[1] whose treatment by **Phosphorus** has already been noted in this "Annual," has written an elaborate paper to which we may refer. He says that considerable care is necessary in employing phosphorus internally, but if it is properly administered, and due precautions are exercised, it is perfectly safe. He has given it for months without harm. Oily solutions and pills sometimes set up severe digestive and liver disturbance, and occasionally jaundice. He therefore prefers Ashburton Thompson's solution. Bulkley begins with gtt. xv, thrice daily after meals. It must be given in water quickly added, and promptly swallowed. Commonly, the dose may be increased by 1 or 2 drops daily, until 30 are taken thrice daily. The dose is then increased more slowly, one drop every other day, until 40 or 45 are taken each time, and in rare cases, if it agrees, even a larger amount may be exhibited. He has seldom given 60 drops for a dose.

Meanwhile, the patient is carefully watched, and the drug stopped, if the digestion shows signs of disturbance. If there is constipation and liver disturbance, he gives a pill of blue mass, colocynth and ipecacuanha, and later the phosphorus may be resumed. During the interval, full doses of nitric acid after each meal are useful, and in hyperæmic cases acetate of potash, with fluid extract of rumex.

Brocq[2] has a favourable experience of the treatment. He gave daily 1 to 4 teaspoonfuls of a mixture containing 1 part of phosphorated oil in 9 of cod-liver oil. Quinquaud abandoned the treatment in one case.

Chicken, of Nottingham, showed the Nottingham Med.-Chir. Society, on May 2, 1894, a case in an elderly woman which was almost completely cured by the nascent sulphur generated in the tissues. He painted on (1,) **Sol. Potass. Permanganatis,** then (2,) **Hyposulphite of Sodium,** and finally (3.) **Dilute Hydrochloric Acid.**

REFERENCES,—[1] "Montreal Med. Journ.," Aug., 1893; [2] "Soc., Franç. Derm. et Syph.," Nov. 16, 1893.

Synopsis.—(Vol. 1894. p. 413.) Phosphorus internally. Thilanin Lupus of extremities is scraped and dressed with compresses of Bichloride Solution Sclerous lupus is treated with Thermo-cautery round the periphery, and then scraped Carbolic Acid as ointment or plaster (1 in 15 or 20) may succeed after failure of salicylic acid Alumnol Plaster,

20% consecutively, powdering with **Pure Alumnol. Cinnamylic Acid** injections, viz., 1 or 2 drops of: R Ac. Cinnamylic, Cocaine Hydrochlor., āā 1 grm.; Sp. Vin. Rectif., 18 grms. Compresses of 5% **Iodoform Solution in Cod-liver Oil. Free Excision** and Grafting by Thiersch's method. Injection of **Thiosinamine**, 15% alcholic solution injected into the back.

LUPUS VULGARIS. *T. Colcott Fox, M.B.*

Brooke gives an excellent analysis of an article by Schütz. The first desideratum is a thorough-going and practical method of destroying, not only the visible, but also the invisible nodules in the skin. The choice of methods depends largely on the extent and position of the diseased area. Schütz recommends **Excision and Sewing up the Wound**, where the lesion is recent, and the process would not cause too great a cosmetic disfigurement. Brooke thinks this recommendation too sweeping, as the sites in which this can be done to the best advantage are not common. Then it is precisely in these recent cases that the best results (cure or reduction in extent) are obtained by absorption brought about by the persistent inunction of ointments, *e.g.*, **Oleate of Mercury,** or the pure metal assisted by the keratolytic action of **Salicylic Acid** or **Molline.** Brooke has not had a favourable experience of Thiersch's method of grafting, and he agrees with Schütz that it is uncertain in its results, and too dependent for its success on either unknown or unpreventable factors, and in private practice it is not easy to get patients or their friends to submit to the loss of a second slice from another limb. Further, the cosmetic effects are doubtful, and the removal of disease by excision is uncertain.

It may be interpolated here that in a discussion at Edinburgh several speakers insisted on the necessity of making a very wide excision, and Alexis Thompson mentioned the fact that when the graft was taken from the thigh, hairs may develop to an unsightly extent.

For the great majority of cases we are driven back to the older methods of **Mechanical Removal** and **Selective Caustics.** Of these, burrowing through the nodules with toughened nitrate of silver points is obsolete, because it is tedious, painful, mostly inefficacious, and may lead to darkening of the scar by deposit of silver oxide. Toughened zinc chloride points may, however, be used.

The method of Veiel of Canstatt is highly recommended by Brooke. Narcosis is desirable, as the process is painful. With a sharpened stick of **Caustic Potash** the whole of the lupus area is first rapidly ploughed, and dried with lint, to prevent too much erosive action. The wound is dressed with 10 per cent. **Pyrogallol Ointment**, kept in place as long as the patient can bear it, and then a $2\frac{1}{2}$ per cent. ointment is substituted till the wound is healed. This healing is slow, but

the scar is clean and soft. In superficial cases, it is necessary only to employ a strong pyrogallol plaster (Beiersdorf's or Turinsky's), and then substitute the weaker pyrogallol ointment.

Schütz's own method consists in vigorously scraping the lupus surface under anæsthesia, and scarifying the surrounding edge over half to three quarters of an inch in width. After stopping the bleeding, zinc chloride (sat. sol.), with a little pure hydrochloric acid, is applied, and the pain combated by ice compresses. The wound cleans under boric acid wet dressings. Then thrice daily apply **Pyrogallol Vaseline** (1 in 4). The pain and the inflammation excited necessitate a recourse to the boric acid dressings again in a few days. Then the pyrogallol vaseline is reapplied, and again the boric acid, and once more the pyrogallol and the boric acid. Healing now rapidly ensues under the influence of iodoform powder and boric acid. (Brooke uses zinc ointment, with 10 per cent. of carbolic acid.) The rationale of the process is the destruction, not only of the bulk of the lupus tissue, but the exposure and gradual sterilization of the spores which lie in the minute masses of the round and plasma cells around the vessels, and which are the causes of relapses. The actual cautery is condemned because it coagulates the tissues, and prevents the entrance of parasiticides. Hence chloride of zinc is used before the pyrogallol is applied.

The after treatment of recurrent nodules is essential, by means of boring out, or the cautery.

Different operators have each their favourite parasiticide application, after the bulk of the lupus has been removed by scraping or other means. Thus A. G. Miller prefers pure **Carbolic Acid**, and Joseph Bell a strong solution of **Chromic Acid**.

Bier's Methed of treatment by causing passive congestion has been tried by A. G. Miller, who thinks it may prove a useful adjunct to other measures in tuberculous affections of the skin of the extremities.

Klevtzoff healed tuberculous ulcers by dressing them with a 1 in 500 aqueous solution of **Blue Pyoktanin**.

Treatment by **Subcutaneous Injection** of various substances is still carried out. Klebs, in a recent work, expounds his researches on the etiology of tuberculosis, and its treatment by his **Tuberculocidin**.

Nor have other workers yet discarded tuberculin. Kossel has published a series of cases treated by **Tuberculin** injections, combined with surgical measures. Liebreich is still treating cases with his **Cantharidate of Potash**.

Van Hoorn has obtained some fair results with Hebra's **Thiosinamin**, but in some cases there was no improvement. Other observers express their disappointment with this substance.

Landerer claims successes for **Cinnamic Acid Emulsion**, injected hypodermically into the veins, and supplemented by local applications of the acid dissolved in glycerine or alcohol. Moreau, of Toulouse, again, has obtained a cure of lupus, tuberculous gumma, etc., with subcutaneous injections of a mixture of **Guaiacol** and **Thymol**, or **Guaiacol** and **Aristol**. The former is less painful. He uses the following solution, injecting 15 minims, increasing rapidly to 45 minims, twice a week :—

℞ Thymol	ʒss	Guaiacol Sterilized Olive Oil	āā ʒij

This treatment sometimes occasions alarming symptoms of pulmonary congestion. It should also be stated that in lupus he also uses the thermo-cautery.

Lastly, we must refer to the use of **Thyroid Extract,** as practised by Byrom Bramwell, and since by many others. There is no doubt, and the writer speaks from his own experience, that in some cases of lupus a great improvement follows the local reaction which is excited by the ingestion of this extract. Whether any cases have been absolutely cured is perhaps doubtful. All these substances just mentioned excite a local reaction in addition to more or less constitutional disturbance. How far this local action affects the bacilli and the specific tuberculous tissue, and how far only the surrounding simple congestion and inflammation, is uncertain. Probably, the improvement in appearance is mostly due to subsidence of all surrounding inflammation, and not due to any direct destruction of the specific bacillus and tuberculous tissue.

References.—"Schütz, "Archiv. f. Derm. v. Syph.," Bd. xvii, Heft i, 1894, and analysed by Brooke, "Med. Chron.," April, 1894 ; Veiel, "Berlin. klin. Woch.," No. 39. Norman Walker and discussion, "Edin. Med. Journ.," Aug., 1894 ; Leslie Roberts, "Liverp. Med. Journ.," Jan., 1894 ; Klebs, "Die Causale Behandlung der Tuberculose," 1894 ; Kossel, "Dermat. Zeitssouft.," Bd. i, Heft. i, 1894 ; Liebreich, "Hufeland Soc. of Berlin," May, 1894 ; Van Hoorn, "Monats. f. prakt. Derm.," June, 1894 ; Landerer, "Anweisung zur Behandlung der Tuberculose mit Zemmt saüre, Leipzig, 1893 ; Moreau, quoted in "La Sém Med.," Byrom Bramwell, "Brit. Med. Journ.," and "Brit. Journ. Derm.," 1894 ; Lake, Laryng. Soc., Lond. ; Klertzoff, "Vratch," No 30, 1893, p. 839 ; Sympson, "Practitioner," Feb., 1894.

MALARIA.

Synopsis —(Vol. 1894. p. 417.) Methylene Blue may be associated with injection of Bichlorhydrate of Quinine. Helianthus Annuus Tincture, 10 grms. daily in divided doses, or Alcoholic Extract, 1 to 6 grms. daily.

Phenocol. Sodium and Potassium Nitrates, 15 to 20 grs. of Sodium Nitrate for a hypodermic dose. Cinchonidine Sulphate, 15-gr. doses and up to 18 or 22 grains.

MANIACAL EXCITEMENT.

Synopsis.—(Vol. 1894, p. 419.) Hot Wet Pack. Hyperalimentation, and occasional doses of Hyoscyamine or Duboisine, if needed.

MEASLES.

J. Madison Taylor, M.D., Philadelphia.

Dr. Clement Dukes[1] tabulates the distinguishing characteristics between epidemic roseola or rose rash, and morbilli or measles, as follows :—

Epidemic Roseola or Rose Rash.	Morbilli or Measles.
(1,) *Premonitory Symptoms.* — In many instances none; no headache; no vomiting; no catarrh; no cough, but frequent sore throat. If the attack be severe, some malaise, anorexia, and drowsiness will exist.	(1,) *Premonitory Symptoms.*—Usually considerable malaise, headache, anorexia, vomiting, watery eyes, catarrh, and characteristic cough for about three days.
(2,) Its *season* is spring and summer.	(2,) Its *season* is spring and summer.
(3,) *The incubation period* is usually eighteen days, but with a range of nine to twenty-one days.	(3,) *The incubation period* has a range of seven to eighteen days from exposure. Rash appears on fourteenth day.
(4,) *The Eruption.*—In the *measles* type this appears as minute *rosy-red* dots, not patches. It shows itself first behind the ears, and on the *scalp and face*, especially on the oral circle; from these situations it extends to the neck and chest, and gradually covers the entire body. The minute dots become larger and gradually coalesce, forming patches, of the bat's wing pattern, indistinguishable from measles.	(4,) *The eruption* appears on the fourth day from the commencement of the malaise and catarrh. It shows itself behind the ears in the first instance, then on the scalp and forehead, and gradually spreads all over the face, body, and limbs, forming crescentic blotches. The eruption is papular in character and *brick-red* in colour, and may gradually assume a blue-red tint, but it never assumes a bright *rose-red*.
(5,) *Additional Symptoms* :—	(5,) *Additional Symptoms.*—
(*a*) *Throat.*—The fauces look dry, with a dark motley red hue.	(*a*) *Throat.*—The fauces are red and swollen, but differ from the fauces of rose rash.
(*b*) *Eyes.*—The conjunctivæ are pink-red and suffused.	(*b*) *Eyes.*—The conjunctivæ are very red, watery, with marked photophobia.
(*c*) *Glands.*—The lymphatic glands throughout the body are enlarged, tender, and hard like peas—notably, the posterior cervical, the axillary, and the inguinal.	(*c*) *Glands.*—Not usually affected. The posterior cervical rarely so, and then not markedly; but the bronchial glands are always enlarged.

(*d*) *Desquamation.*—In the measles variety there may, perhaps, be a little branny desquamation, but frequently there is none.

(*d*) *Desquamation.*—There is a little branny shedding of the epidermis, varying according to the intensity of the rash.

(*e*) *Kidneys.*—Rarely affected, and then only with a transient trace of albumen.

(*e*) *Kidneys.*—Not affected.

(*f*) *Diarrhœa.*—Never.

(*f*) *Diarrhœa.*—Very frequent.

(6,) *Sensations of Illness.* — Even with a full eruption, as intense as in measles, the patient usually states that he does not feel ill, although there may be other indications to show that he is really ill.

(6,) *Sensations of Illness.*—I have been repeatedly informed by strong, as well as by delicate, boys that they have never felt so ill in any illness. They continually suffer from delirium and complete anorexia, and lie quite prostrate.

(7,) *Tongue.*—Clean or slightly furred, never coated with a thick white fur, which peels on the fourth day.

(7,) *Tongue.*—Slightly furred, but not coated.

(8,) *Pulse.*—Normal or slightly increased in frequency, but always bearing a ratio to the temperature.

(8,) *Pulse.*—Usually accelerated, and may be very feeble and dicrotic, but always bearing a ratio to the temperature.

(9,) *Temperature.* — Varying from normal to 103° or 104° F.

(9,) *Temperature.* — Usually heightened from 101° to 104° F.

(10,) *Course of Illness.*—The symptoms, however severe, pass off in a few days.

(10,) *Course of Illness.* — Convalescence more protracted, often considerable prostration.

(11,) *The Duration of Infectiveness.*—From ten to fourteen days where efficient disinfection is in force.

(11,) *The Duration of Infectiveness.*—From fourteen to twenty-one days, according to the severity of the illness, where efficient disinfection has been carried out.

(12,) *Protection.* — The attack affords no protection against measles.

(12,) *Protection.*—The attack affords no protection against the scarlet fever or measles variety of rose rash.

(13,) *Sequelæ.*—Practically none.

(13,) *Sequelæ.*—Pneumonia, bronchitis, pleurisy, ophthalmia, otitis, etc.

(14,) *Termination.*—Usually complete recovery in a fortnight.

(14,) *Termination.*—Usually complete recovery in a fortnight at the school age; but sometimes followed by a prolonged period of ill-health.

(15,) *Treatment* in both cases is very similar. The patient requires about five days in bed, followed by three days in-doors, then about six days in the fresh air, and, after complete disinfection, may safely mix with others.

It must be noted that abortive cases of roseola are frequent, and their occurrence difficult to detect.

There are also two other eruptions which have a close resemblance to that of epidemic roseola ; the one is *roseola simplex*, which arises in hot weather, after chill, or as the product of various indigestible articles of diet. It is readily distinguished, however, by the absence of enlargement of the lymphatic glands. The other eruption is that occasioned by handling *caterpillars*, which boys are very fond of keeping. He discussed this question fully in a paper in the "Lancet" in 1881.

He also mentions a medicinal eruption occasioned by copaiba, which Mr. Hutchinson called the morbillio sine catarrh.

REFERENCE.—"Lancet," Mar. 31, 1894.

METRITIS.

The following treatment is advised : Absolute **Rest, Laudanum Fomentations** upon the stomach, frequent **Hot Irrigations** with emollient and slightly aromatic liquids. The following represents an excellent formula :—

℞ Chloral	Alcohol	āā ʒiij
Naphthol	Water	ʒviij

A tablespoonful of this mixture is added to a quart of hot water. After each injection there is placed in contact with the os a pledget of absorbent cotton soaked in the following mixture :—

℞ Iodoform	ʒj		
Chloral	ʒj	Glycerine	ʒiij

In case of very severe pain, **Blisters** applied to the abdominal surface give relief, or in milder cases these may be replaced by **Compresses** sprinkled with turpentine or alcohol and covered with oiled silk. Scarification and leeches applied to the os are absolutely useless during the acute stage.

REFERENCE.—"Therap. Gazette," June 19, 1894.

METRORRHAGIA AND MENORRHAGIA.

Synopsis.—(Vol. 1894, p. 420.) **Vaginal Tampon**, preferably by **Cotton Wads** soaked in **Carbolized Water**, compressed flat and applied firmly to vaginal vault.

MIGRAINE.

Synopsis.—(Vol. 1894, p. 421.) ℞ Butyl chloral Hydrat., gr. xv ; Tinc Gelsem., ♏ xxx ; Tinct. Cannabis Indicæ, ♏ xv ; Glyc. ʒiv ; Aq. ad ʒiij ; M. *Sig.*—⅓ part at once, and repeat in half hour. ℞ Ext. Cannabis Ind., gr. $\frac{1}{6}$; Acid. Arseniosi, gr. $\frac{1}{60}$; Ferr. Redact., gr. j ; Ft. pil. *Sig.*—1 t. d

and increased. R Ext. Cannabis Ind., gr. ½; Pulv. Digital., gr, ½; Ferri Lactat , gr. ij; Ft. pil. j, t. d. post cib. R Ext. Cannabis Ind., gr. ½; Ext. Nuc. Vom., gr. ¼; Ergotini, gr. j. Ft. pil. j, t. d. p. cib. if brain is hyperæmic. Massage of abdomen, with or without general massage.

MOLLUSCUM CONTAGIOSUM. *T. Colcott Fox, M.B.*

The little tumours of molluscum contagiosum are easily removed by various methods, which are of service according to the site, size, number of growths, etc. **Expression** by the fingers is efficacious, especially if, as Crocker suggests, a little incision is first made, and the pressure be exercised at right angles to the incision. The **Scoop** or **Curette** is also useful, and Morrow, of New York, has devised a **Falciform Curette**, which he found admirably adapted for the removal of the numerous lesions in the generalized forms met with in adults. Certain pedunculated growths can be *snipped off*. **Electrolysis** may be applied where the number is limited.

Other means are sometimes convenient, and the tumours wither away after being touched or punctured with pure **Carbolic Acid**, and then brushed with flexile collodion (Jamieson) or mercurial plaster (Cutler, Sherwell). Sometimes a second painting with the acid is necessary in about ten days. Klotz punctures the growths with a sharply pointed toothpick, saturated with a 50 per cent. **Chromic Acid** solution. Jaya injects into the base of the tumours 1 or 2 drops of a 1 per cent. solution of **Corrosive Sublimate**, making sure that the fluid reaches the tumour itself. The growths atrophy and dry up without leaving scars. Stronger caustics, of course, may be used. If the growths are thoroughly expressed or removed, there is no reason for carrying out the older method of touching the base with nitrate of silver or other caustic.

We have now direct proof of the inoculability of M. contagiosum, and it may be mentioned Allen accidentally inoculated himself on the hands whilst attending to a case.

Nobel has followed up Pick's successful inoculation, and produced two molluscum contagiosum tumours on the forearm by the intra-epithelial inoculation of material taken from mollusca of the penis. They were distinguishable in two weeks, and in nine weeks were typical. Hebra suggests the name *verrucose acanthoma* for this disease.

References.—New York Dermat. Soc., March 27, 1894; Nobel, quoted "Ann. de Derm. et de Syph.," Feb. 1894, p. 230; Jaya, quoted "Ann de Derm. et de Syph.," Jan., 1894.

MORPHINOMANIA.

Synopsis.—(Vol. 1894, p. 424.) Sparteine hypodermically, or **Digitalis** by mouth to support heart while morphia is being reduced. **Coca, Kola, Valerianate of Ammonia**, or **Bromides** for restlessness. Hyoscine, $\frac{1}{100}$

gr. doses for sleep. **Sulphonal.** **Hydrate of Amylene**, 20 to 30 drops by bowel is best hypnotic. As sedatives the **Hot Air Bath, Weak Cerebral Galvanization** or **Muscular Faradization. Chloroform Water, Bicarbonate of Soda** to check gastric acidity, or **Fairchild's Pepsine. Moderate Turkish Baths, Rational Cycling. Cocaine** internally: R Cocain. Muriat, 0·5; Acid Salicylat., 0·1; Aq. dest, 100·0. *Sig.*—0·05 for a dose, never exceeding 0·5 daily.

MYOMA (Uterine). *Wm. J. Smyly, M.D., F.R.C.P.,I.*

Panhysterectomy for Myoma.—At the meeting of the British Medical Association in Bristol (1894) I read a paper on total extirpation of the myomatous uterus. The chief problem in hysterectomy for myoma is still the best method of dealing with the stump. I prefer its total removal. At first I employed a mixed method, removing the fundus by abdominal section, and the cervix per vaginam; but latterly I have removed smaller tumours, not reaching higher than the umbilicus, per vaginam and larger tumours by abdominal section. These operations are performed as follows :—

Vaginal Hysterectomy by the method of M. Doyen, of Reims.—In addition to the ordinary preparation, the vagina is carefully asepticised and dilated with Gariel's air pessary. The patient is placed at the edge of the operating table in the lithotomy position, her lower extremities being supported by assistants. The operator, sitting in front of the perineum with a third assistant on his left, seizes the cervix on both sides with bullet forceps and draws it downwards. A circular incision is made around it with Landau's rectangular knife, opening, if possible, the posterior cul de sac; the bladder is separated from the front of the cervix, pushed upwards with the ureters, and protected from injury by a narrow retractor (*Fig.* 28). The anterior wall of the cervix is next divided in the middle line as far as exposed, and the lips of the wound seized right and left with muzeux forceps. The assistant making traction with these, more of the anterior wall is exposed and the incision is prolonged upwards, two more forceps being applied as high as possible; more of the uterus is drawn down and divided, the first pair of muzeux forceps being taken off and applied higher up. The peritoneum is generally divided by the second or third cut of the scissors, and the opening having been enlarged transversely the retrac-

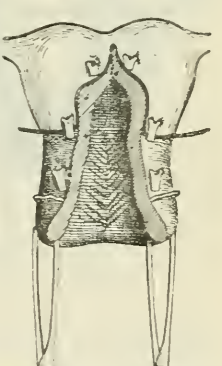


Fig. 28.—Anterior aspect of a uterus of small size, showing longitudinal section (Doyen).

tor is pushed into the opening. If the vagina be not very narrow and the uterus not more than double the normal size, its extraction is effected without difficulty and without the necessity of prolonging the incision very far upwards ; but if the organ be greatly enlarged it will soon cease to come down, and the median incision cannot be prolonged upwards. Two lateral incisions are then made in the form of a V on either side of the median one, and the wedge of tissue included removed (*Fig.* 29). The incisions are prolonged upwards, and the intermediate tissues, including any portions of the tumour, which present in the wound, cut away.

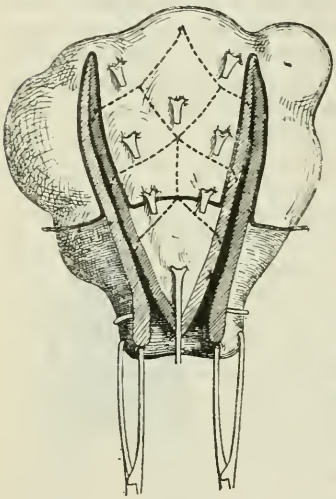


Fig. 29.—Anterior aspect of a large fibromatous uterus, with V shaped incision and morcellement (Doyen).

If steady traction be maintained there is no hæmorrhage, and no hæmostatic is required until the uterus is outside the vulva. The left broad ligament is then grasped by the corresponding hand and a clamp is applied vertically from above downwards, making sure that the entire ligament, and if possible the uterine appendages and nothing else are included within its grasp. Another clamp is applied to the base of the ligament for greater security, and both having been firmly closed the ligament is divided. The right broad ligament having been similarly treated the uterus is removed. The peritoneal edges having been drawn downwards and carefully adjusted a sterilized tampon is introduced and the operation is completed. The clamps are removed in about forty hours. I have performed this operation five times, and am thoroughly satisfied with the results. It was practically bloodless; there was a remarkable absence of shock ; the patients were out of bed within a fortnight, and there was of course no abdominal wound.

Abdominal Hysterectomy by the method of Dr. Martin, of Berlin.— The preparation is the same as in the former operation, but the air pessary is unnecessary. The night before the operation the vagina, which is carefully asepticised, is plugged with alembroth gauze.

The abdomen having been opened by a sufficiently large incision, the uterus is drawn well forward, putting the pelvic floor upon the

stretch. The infundibulo-pelvic ligaments are ligatured, and beneath them two or three ligatures placed upon the broad ligaments. A clamp having been placed upon the uterine side the ligaments are divided down to the cervix close to the vaginal vault. All bleeding vessels having been ligatured, an incision is carried across the posterior surface of the cervix uniting the wounds in the broad ligaments, and the tissues separated down to the vagina, which is freely laid open. Should any uncertainty be felt in doing this, a forceps may be passed up into the posterior fornix to serve as a guide. The peritoneum is then stitched to the vaginal mucous membrane, knotting the ligatures on the peritoneal side. The cervix is next freed laterally, taking care to insert sutures before dividing the structures and uniting mucous membrane to peritoneum. Then the vesico-uterine fold of peritoneum is divided transversely, and the bladder separated with the finger. Lastly, the mucous membrane of the vagina is divided close to the cervix and stitched to the peritoneum, taking care to include a portion of the bladder wall in each suture: Martin inserts the sutures before dividing the vaginal insertion. The uterus having been removed and all hæmorrhage controlled, the ligatures are twisted into a rope and drawn downwards through the vagina; the peritoneal surfaces are thus brought into contact and a few catgut sutures are inserted to close the peritoneal cavity below. The pelvis having been cleansed and the intestines replaced, the abdominal wound is closed and dressed in the usual way. The vaginal sutures are then cut short and the vagina lightly packed with aseptic gauze.

I have performed the operation five times, but unfortunately lost the first case.

MYOPIA. (See "Eyesight.")

MYXŒDEMA.

Synopsis.—(Vol. 1894, p. 429.) Administration of Thyroid Glands of sheep. Perchloride of Iron.

NERVOUS SYSTEM. *Allan McLane Hamilton, M.D., New York.*

The Value of Electrical Reactions in Diagnosis and Prognosis of Nervous Disease.—C. L. Dana called attention to the importance of observing the greatest care in estimating the results of electrical tests, and emphasized the fact that the want of correspondence in the investigations of various persons was due to errors in manipulation, which it was not always possible to avoid.

In the tests made by himself, he had employed an indifferent electrode, of about the size specified by Erb; this was to be tied down, not held by the hand, so that there were no variations in the amount of

pressure. For the active electrode he had employed a small pointed electrode, the surface of which measured one square centimètre. By means of this one could get the muscular irritability at different parts of the muscle, could see whether the contractions were sluggish or not, and could also learn the diffusibility of the contraction, which was a form of reaction that had not been sufficiently noted. If an electrode with a large surface was employed the diffusible reaction was not brought out with any certainty. The small pointed electrode could also be shifted to the motor point of the nerve, and thus the nerve reaction be obtained. In some cases the strength of the current required was so great that the point of the electrode gave rise to too much pain ; in such a case he employed the ordinary-sized electrode. The electrode was first placed on the body of the muscle and reaction obtained with a gradually increasing current, and then the same reaction with a gradually decreasing current. These reactions were compared with those on the opposite side, and the operation repeated two or three times with a proper interval between to allow the muscle to rest.

The three points that he had particularly investigated in connection with spinal lesions were : First, the relative irritability of the two poles ; second, the character of the reactions—*i.e.*, whether they were sharp or sluggish, or sluggish and diffuse ; and third, the course of the variations of the reactions in the different stages of the disease.

Influence of Infectious Processes on the Nervous System.—At the third meeting of the Congress of American Physicians and Surgeons, a discussion upon this important subject formed a part of the proceedings of the American Neurological Association, the consensus of opinion being that the infectious diseases generally admitted as causes of nervous affections were tetanus, rabies, syphilis, tuberculosis, hysteria, lepra, gonorrhœa, typhoid fever, erysipelas, influenza, mumps, the acute exanthemata, the presence of pyogenic organisms or of the *Diplococcus lanceolatus*, malarial disease, and actinomycosis. The nervous troubles following acute infectious disease were not always due to the primary infection, but sometimes to a secondary infection ; or they might be only an indirect result. The more important diseases of the nervous system which had only been suspected of being of infectious origin were poliomyelitis, Landry's disease, certain forms of myositis, neuritis, and myelitis, some of the cerebral palsies of children, chorea, disseminated sclerosis, and other cerebro-spinal scleroses, amputation neuritis, and herpes zoster. Finally, there were various affec-

tions following in the wake of infectious processes, but hardly to be classed as indicating the action of a specific virus. Such were the constitutional neuroses and psychoses and the adynamic cerebral affections, the result of œdema or of arterio-sclerosis ; various forms of sclerosis of the spinal cord, to which the nervous system was always prone ; and subacute forms of multiple neuritis of the ordinary type.

The arguments were strong in favour of the infectious origin of the different forms of the acute myeloneuritis or poliomyositis, which appeared to be due to powerful poisons acting like bacterial toxines. Bacteria had been found in Landry's disease, and myelitis had been produced experimentally by infection with cultures. Acute multiple neuritis might follow almost any one of the infectious processes. The meningitis which followed the exanthemata was probably due to secondary infection. The specific organisms prone under favourable conditions to cause meningitis were often present in even the healthy pharynx. The instances of local bacterial action upon the nervous system were few, while, on the other hand, the nervous system was especially prone to suffer from toxic agents in the blood. Several of them had a strong tendency to attack the vaso-motor system, and by disturbing the circulation prevent that normal vascular dilatation so necessary for the protection of the body against the invasion of pathogenic organisms. In tetanus the irritability of the spinal cord was heightened, as in strychnine poisoning ; in diphtheria, the cardiac centres were sometimes involved, though gross lesions might be absent ; in influenza the tendency of the poison was towards the brain more than in the case of some of the analogous diseases.

Reference.—"New York Med. Journ.," March 24, 1894.

NEURALGIA. *Allan McLane Hamilton, M.D., New York.*

Johnson presents a case of neuralgia of the great occipital nerve in which there were concurrent symptoms, such as unilateral sweating and excessive lachrymation, dyspnœa, and change of expression with pupillary differences, but no paralysis. It was believed that the cervical sympathetic was at fault, and an incision was made and the superior cervical ganglia freed from certain adhesions between it and the sheath of the internal carotid, the result being an immediate disappearance of the pain and a diminution of all the symptoms.

Eshner has used the $\frac{1}{30}$ of a grain of **Gelsemine** thrice daily in neuralgia without any evil effects.

Reference.—"New York Med. Journ.," May 5, 1894.

Synopsis.—(Vol. 1894, p. 434.) **Aconitine, Morphine,** and **Atropine** hypodermically, and perhaps **Antipyrin**; internally **Quinine, Antifebrin** and **Exalgine**; refrigeration with **Chloromethyl. Veratrine, Camphor** and **Menthol** in ointments. **Antipyrin** and **Phenacetin** for hemicrania of imperfect digestion. **Opium** alone or with **Cocaine** for smarting pain in neuroses of digestive tract. **Quinine** and **Salicylate of Sodium** for rheumatic neuralgia: R Chloroform, ʒvj; Sulphuric Ether, ʒj; Sp. Camphor, ʒiij; Tinc. of Opium, ʒjss; M. *Sig.*—Soak a piece of flannel with the liniment and apply over the affected area.

NEURASTHENIA. *Allan McLane Hamilton, M.D., New York.*

Grasset, in a paper upon the treatment of neurasthenia, makes the following observations as to therapeusis :—

(A,) In the Slight Form :—

(1,) Eat as much nourishing food as possible, all that can be digested; no mental work; bodily exercise in the air without fatigue.

(2,) Every morning cold horizontal douche over the whole body, with the exception of the head (twenty to thirty seconds); dry friction, and then walk. If the douche is not possible, quick submersion in cold bath. Before dinner, massage of the whole body.

(3,) Apply the two following methods, changing so that twenty days' treatment are followed by ten days' rest each month :—

(*a*) ℞ Alcoholic Ext. Kola 10·02 | Syrup Aurantii 300 c.m.
Sig.—Take with every meal 1 tablespoonful.

Or :—

℞ Tinct. Kola | Acid Citrate 1·0
Tinct. Coca āā 50 c.m. | Sodium Arsenici 0·05
Sig.—Take 1 teaspoonful.

(*b*) ℞ Take with each meal a powder of Ferr. Redacti 0·10

And 1 tablespoonful of :—

℞ Aqua 300·00 | Acid. Hydrochloric. 1·0

(4,) In Spring and Autumn, treatment for six weeks in Hydropathic Establishment.

(B,) In the Serious Form :—

(1,) Patient must be removed from his surroundings, best into a Hydropathic Establishment under continual observation of the physician.

(2,) Absolute mental and physical rest. Exercise in the open air to be directed according to the return of strength.

(3,) Methodical and passive massage of the whole body. Cautious electrotherapy. Later, short cold immersions, followed by rest in bed, then short cold douches.

(4,) Progressive over-nutrition, beginning with milk, then eggs, minced raw meat, and, later, twice a day a teaspoonful of :—

℞ Sulphate of Strychnine 0·5 | Aqua 150·0

When patient becomes stronger give the internal medication prescribed for the slight form.

(5,) When the patient is strong enough, short voyages. The disturbances in the digestion of neurasthenics are to be treated like dyspepsia in general.

(C,) Brown-Sequard's Treatment :—

(1,) Suspend every other treatment.

(2,) Under complete asepsis a subcutaneous injection of a mixture of 2 c.m. of equal parts of **Testicular Fluid** and distilled water. Increase the dose every day 1 c.m. until 5 to 6 c.m. are given daily.

(3,) Continue for twenty days, rest ten, and then recommence after another twenty days. (These two series will show whether or not the treatment is to be continued.)

(4,) If from any cause the subcutaneous injections become objectionable, inject the fluid in the rectum (1 to 2 c.m. testicular fluid and 4 to 5 c.m. water). The same directions for time as in the subcutaneous injections, unless there should be irritation in the bowels.

(D,) Injections of Artificial Serum :—

In cases of arterial tension (tachycardia, embryocardia) two to four times daily a subcutaneous injection of the following mixture :—

℞ Sodium Phosph.	10·0	Acid Carbol.	0·5
,, Sulph.	5·0	Aqua des. (boiled) q. s. ut. f.	100 c.m.
,, Chlor.	25·0		

Fleury gives the results of his treatment of twenty-one patients, the use of subcutaneous injections of artificial serum playing an important part.

The author has experienced excellent results by the following treatment. The physical fatigue, loss of appetite, impotence and intellectual weakness disappear promptly upon subcutaneous injections of the concentrated artificial **Serum**, which has at least the same effect as testicular fluid. The neurasthenic dyspepsia is cured by reasonable diet, with abstinence from alcohol. By regulating the employment of his day, hour by hour, and by giving the patient rational occupation, especially in the forenoon, one will soon succeed in producing sleep without medication. Success in twenty-one cases : seventeen cured, four greatly improved.

Dercum in an elaborate paper upon the use of the **Rest Treatment** in this condition, calls attention to the existence of permanent and

terminal changes in some cases of neurasthenia which prevent any treatment from being more than moderately successful, and the most difficult cases to manage are those of the hereditary type.

REFERENCES.—"Gaz. Med. de Paris," 1893, No. 42; "The Therap. Gaz.," Dec. 15, 1893.

Synopsis.—(Vol. 1894, p. 435.) Injection of **Gray Brain Matter of Sheep**, diluted with water. ℞ Zinc Phosphide, gr. ij; Zinc Bromide, gr, xx; Quinine Bromohydrate, gr. xxx; Ext. of Nux. Vom., grs. iij; M. Divide into thirty pills; 3 daily for gastric disturbances of neurasthenia.

NEURITIS.

Synopsis.—(Vol. 1894, p. 437.) **Arsenic, Continuous Current,** and **Belladonna** and **Chloroform** applied locally gave great relief in peripheral neuritis due to hysteria.

NOSE.

Synopsis.—(Vol. 1894, p. 443.) Acute nasal catarrh of infants at breast may be relieved by spraying with 5% **Cocaine Solution** just before child nurses, or application of **Spray of Menthol,** 20% in olive oil, or syringing with **Camomile Infusion** with a little **Alum**; introduction of tubes into nostrils. In chronic form **Gray Powder** is useful, also spraying with: ℞ Sodii Carb., gr. xv; Sodii Biborat., gr. x; Sodii Chlorid., gr. v; Aq. dest. ad ℥j. In adults, treatment of chronic rhinitis must be by general measures and local applications, *e.g.*, **Liquid Vaseline** containing **Terebene,** gr. x to ℥j; **Eucalyptol,** gr. xv to ℥j; with **Camphor,** gr. j to ij to ℥j, sprayed in night and morning. To remove crusts forcible spraying of weak solution of **Soda Bicarbonate** and **Borax** in warm water followed by the oily solution. Later a snuff may be used twice daily, *e.g.*, **Sodium Chloride,** ℥ij; **Boracic Acid,** ℥ss; **Ammonium Chloride,** ℥ss; **Camphor,** gr. j. Other solutions are **Zinc Sulphate,** grs. ij, or **Alum,** gr. iv to viij; **Zinc Chloride,** gr j; **Silver Nitrate,** gr. ij to xv; **Sodium Benzoate,** gr. xxx to ℥j; **Tar Water** insufflations containing **Nitrate of Silver, Tannic Acid, Iodol, Sozoiodol, Sanguinaria,** etc. For hypertrophic form **Galvano-cautery** or **Snare,** or in slight cases, **Trichloracetic** or **Chromic Acids** may be applied after using cocaine, and the application followed by daily cleansing with: ℞ Sod. Bicarb., grs. x; Sod. Biborat., grs. x; Tinc. Benzoin Co., ♏ x; Glyc., ♏ xx; Aq. ad ℥ij. This is followed by insufflation of a powder, *e.g.*, ℞ Ac. Boracic, gr. iij; Sod. Chlorid., gr. ¼; Bismuthi, Subcarb., gr. ¼; Morph. Acet., gr. ⅛. For atrophic form all crusts must be sprayed away with such a lotion as Dobell's or simple warm water with a little **Bicarbonate of Soda** or **Sanitas** added, and to restore function of the membrane a spray of 1% solution of **Iodic-hydrarg.** is useful, but hypodermic injection of **Morphia** is required to allay pain. **Faradic Current, Internal Massage.** In atrophic rhinitis watery astringent solutions, *e.g.*, **Peroxide of Hydrogen,** 10 to 20%; **Mercuric Bichloride,** 1 to 4000; **Boric Acid, Potassium Permanganate** and **Carbolic Acid** may be used, but by means of post nasal spray. Mild astringents, 2 or 3 grs., to ℥j of **Silver, Copper, Zinc, Tannic Acid,** or **Iron** may be used similarly. Stimulating disinfectants, *e.g.*, **Listerine, Thymol, Menthol, Eucalyptol, Oil of Wintergreen,** etc., cleanse and comfort dry congested surfaces

OBESITY.

Synopsis.—(Vol. 1894, p. 450.) Every morning sponging with hot Eau de Cologne and Water, then Dry Rubbing and Massage, a tumblerful of purgative water, rigid diet, following each meal by a dessertspoonful of a solution of Potassium Iodide, 15 grms. to 250 grms. of water.

ŒDEMA (Angio-neurotic). *W. Ramsay Smith, M.B. (Edin.).*

In the autumn number of "Brain,"[1] 1893, Drs. Ernest Wills and Dudley Cooper record particulars of five cases of angio-neurotic œdema observed by them. In all these cases localised, red, œdematous patches, variable in size, irregular in distribution, hot to the touch, but not tender, appeared in various parts of the body, lasted for a day or two, and then disappeared, leaving, as a rule, no trace behind them. In no case was the general temperature raised: in none of the cases was there any organic disease likely to produce the condition noted; but all the patients might correctly be classed as neurasthenic.

In discussing these cases, and similar cases recorded by other observers, the writers come to these conclusions regarding the *etiology* of the condition: That chief among *predisposing causes* are hysteria, hystero-epilepsy, neurasthenia, and the allied emotional states. Other observers add heredity as an important factor. As regards *exciting causes*, the writers give the first place to psychical disturbances, and enumerate as other causes: (1,) The onset of puberty; (2,) The climacteric; (3,) Gastric irritation; (4,) Exhaustive nervous drain during the time of adolescence.

They state their view of the *pathology* of this form of angio-neurotic œdema thus: "A local paralysis of the vaso-constrictors, or a reflex stimulation of the vaso-dilators, causes a dilatation of the vessels of the subcutaneous tissues, which is followed by retardation and stasis of the blood. An exudation, usually serous, sometimes sanguineous, then occurs, producing an œdema, but the œdema is not sufficiently acute or sufficiently localised to cause any lifting up of the epidermis as a whole, and the resulting condition may be fitly termed an *abortive urticaria*." The writers note that other authors, Quincke, Dinkelacker, Rapin, Minich, Osler, and Strümpell have recognized the association of angio-neurotic œdema with true urticaria.

Dr. Gerald Fitzgerald[2] has recorded and discussed three cases of another manifestation of angio-neurosis under the title of Acute Circumscribed Œdema. There are two varieties of this:—

(1,) The *cutaneous form* in which the local changes may be divided into three stages: "First, a stage of redness and heat of the skin, accompanied by a sensation generally described as tingling; second, a stage of swelling, when the redness is succeeded by pallor, except

around the margins where it remains; third, a stage during which the serum escapes under the cuticle, raising it up into bullæ. These stages, however, may not all occur. The first only may develop, or the first and second, and the complete picture is seldom seen except where a very large area happens to be involved."

(2,) The *subcutaneous form*, in which the skin itself is affected only in so far as it may be made pale by the mechanical pressure of the hard, tense, and possibly painful tumour underneath.

Dr. Fitzgerald notes that while the local symptoms generally disappear in at most a few days, the disease may be exceedingly chronic; one crop of lesions appearing after another; that there may be considerable constitutional disturbance during an attack, the pulse being quickened and the temperature raised; also that this disease is often associated with urticaria, and accompanied by such well-marked gastro-intestinal symptoms that he feels inclined to raise the question "whether they are not really part and parcel of the disease, whether the mucous membrane of the stomach and intestine is not subject to an affection more or less resembling that of the skin." One of his cases had a history of asthma, another showed well the phenomenon of *tache ménangitique*.

In the "Practitioner"[3] for April, 1894, unaware of the work done by Drs. Ernest Wills and Dudley Cooper, and unintentionally adopting the same title for my communication, I recorded in detail a typical case of *a very distinct general disease of the vaso-motor system*. This case came under my observation in 1887, and a study of repeated attacks of the disease in that patient and in other patients[4] seen since then have confirmed the view I formulated at the time regarding the nature of the disease. The chief features of an attack are these: The whole body becomes swollen, red, hot to the touch; the patient complains of great heat, fulness, tingling, and itching in parts, and sometimes intense pain in the palms of the hands and the soles of the feet: there is great prostration, and there may be sickness and vomiting; the general temperature is considerably raised; and after the acute symptoms have subsided, the whole body desquamates freely. Briefly, the most constant and characteristic symptoms are *high temperature, certain subjective symptoms, hyperæmia of the skin, and subsequent desquamation*. The patients showed well marked idiosyncrasies towards certain drugs, *e.g.*, chloroform. The *exciting causes* appeared to be sometimes local, *e.g.*, cold in the ear, carious teeth, uterine congestion, sometimes more general, *e.g.*, mental excitement and bodily exhaustion.

The general features presented by a typical attack seemed to be but

an extension and aggravation of the local affection I had observed. This local affection is apparently the same as that described by Drs. Ernest Wills and Dudley Cooper and others, only in some of my cases pain has been a notable feature, and most of my patients have shown no tendency whatever to hysteria, alcoholism, or gastric irritation, and little, if any, to neurasthenia. I have found localised angio-neurotic œdema causally connected with migraine, astigmatism, defective teeth, pharyngeal adenoids, and other conditions.

As regards the *pathology* of the definite form of general angio-neurotic œdema I have described, I have little hesitation in ascribing the condition to a lack of energy in the vaso-constrictor centres in the medulla oblongata and cord. I find no evidence to warrant me to state from my own cases that the condition is an index of an unstable nervous system generally.

TREATMENT.—The treatment of angio-neurotic œdema resolves itself naturally into : (1,) The removal of all possible peripheral sources of irritation ; and (2,) The improvement of the general health. Dr. Fitzgerald characterizes the treatment of acute circumscribed œdema as purely empirical and unsatisfactory, apart from treatment directed to any obvious cause. In the general treatment, both of local and general angio-neurotic œdema, after the urgent symptoms have been relieved, I rely mainly on **Arsenic, Ergot,** and **Bromide of Iron.** The formula I employ very extensively for these and many allied conditions is the following :—

℞ Acidi Arseniosi gr. $\frac{1}{60}$ | Pilulæ Ferri Bromidi grs. iv
Ergotini gr. j |

Fiat pilula. Tales 48. Sig.—One to be taken three times a day after food.

The pill of the bromide of iron is after the formula of the pill of the iodide of iron (B.P.), and the use of it in this fashion is due to a suggestion by Dr. G. A. Gibson some years ago regarding the treatment of a case of Graves's disease. I have found the results of a course of this treatment in most cases of angio-neurotic œdema eminently satisfactory.

REFERENCES.—[1] "Brain," Autumn, 1893, with a very full list of references ; [2] "Edinburgh Hospital Reports," vol. i., p. 179, 1893 ; [3] "Practitioner," April, 1894 ; [4] "Lancet," July 14, p. 76, 1894.

ORCHITIS.

Synopsis.—(Vol. 1894, p. 453.) Pulverisations of Phenic Acid, 2%, for quarter of an hour, twice daily.

ORTHOPÆDICS. *John Ridlon, M.D., Chicago.*
Robert Jones, F.R.C.S., E.

Recumbency in the treatment of Pott's Disease.—Dr. John C. Schapps[1] describes a modification of the Steel's stretcher bed with a new contrivance for adjusting pressure from kyphosis without the necessity of moving the child, and with an attachment for transferring the bed into a wheeled carriage.

In discussing the intentions for the use of this cot he says, Recumbency is indicated as routine treatment as soon as the diagnosis of spondylitis has been made, or even when it is probable; for the intrinsic tendency of the disease to progress is in each new case such an unknown quantity that no time should be expended during the developmental stage by experimenting with less thorough methods of treatment. In case of a patient wearing a support, progressive deformity or the persistence of pressure sores should be regarded as demanding recumbency. It is, of course, presumed that the splint had been skilfully designed and applied, that pressure had been diffused over as much surface as the case will permit, and that by cleanliness and dryness every care had been taken to protect the skin. While no method can claim to prevent in all cases an increase of deformity, such increase should in no case be regarded as inevitable until it is ascertained what can be done by the careful use of mechanical force applied to the passive horizontal spine. Marked psoas rigidity denotes a considerable degree of activity of the disease, and probably abscess. When the patient walks or stands with the thigh flexed, the forward inclination of the trunk causes the weight of the mass above to act at a great mechanical advantage in the production of deformity. Support is thus made very difficult and uncertain, and femoral movement exerts, through the shortened muscle, a direct injury upon the diseased spine. These cases should be treated in the horizontal posture, and the limb elevated upon an inclined plane sufficiently to relax the psoas muscle. By means of adhesive plaster a weight is attached to the limb and traction made as in hip disease. As the muscle relaxes the plane is to be lowered. Pott's paralysis, even a slight dragging with exaggerated reflex, should be regarded as an unequivocal indication for recumbency with all possible traction. Many very brilliant results, even when there were present incontinence of urine and fæces and large bed sores, have thus been obtained. Patients with abscess should generally be treated in the horizontal position; always if the abscess is new or increasing. Night cries, a grunting respiration, peripheral pain, referable to the spinal nerves coming from the seat of the disease,

an inclination of the patient to lean on chairs, etc. indicate an insufficient support and the need of recumbency.

Knee Joint Disease.—Dr. A. M. Phelps[2] states the following propositions in reference to the etiology of the deformities occurring in this affection :—

(1,) In diseases of the condyles of the femur or the head of the tibia the leg always assumes a flexed position to a greater or less extent.

(2,) After the limb flexes the foot rotates outward, and rotation increases with flexion.

(3,) In diseases confined to the patella the limb never flexes.

(4,) In diseases of the synovial sac, or fibrous capsule, anteriorly, unattended with disease of the condyles, cartilage, lateral or crucial ligaments, the limb remains straight.

Three experiments were made, lying, standing with leg flexed, and standing against a bar, to determine the relative strength of the flexor and extensor groups, and the following conclusions were reached :—

Typical deformities are produced by changes of leverage and action of muscles due to (1,) A voluntary effort to relieve pressure and pain ; (2,) Involuntary spasm and contraction of muscles, which increases the deformity by advantage of leverage due to flexion ; (3,) Nervous irritation of groups of muscles due to local lesion in or about the joint ; (4,) Exceptional deformities are produced by pathological destruction of bone, or soft parts ; (5,) Outward rotation of the leg is produced by spasmodic contraction of the biceps after flexion has taken place. Flexion allows lateral and rotary motion at the joint.

Distraction in the Treatment of Hip Disease.—Bradford and Lovett[3] report eighteen experiments of traction with ten and twenty pounds upon the hips of seven healthy children from six to sixteen years of age. In ten instances there resulted lengthening from $\frac{1}{8}$ to $\frac{1}{4}$ inch ; in five there was no change ; and in three there was an actual shortening of $\frac{1}{8}$ inch. Twenty-four like experiments were made with a like traction force upon the diseased hip joints of twelve patients from four and a half to sixteen years of age. In nineteen instances there resulted a lengthening from $\frac{1}{8}$ to $\frac{3}{8}$ inch, and in five instances there was no change.

They further report in detail twelve cases of hip-disease treated by traction for a longer or shorter period ; no evidence, however, being adduced that the traction in these cases at any time distracted the joints. They conclude that at a certain stage in hip disease traction

force is desirable ; that the amount of traction should be in proportion to the amount of muscular spasm, and continued as long as the spasm persists ; that it is also demonstrable that an efficient traction force distracts, and it is manifest that distraction, or the separation of one inflamed bone from an adjacent inflamed bony surface is desirable ; that in this way every chance is given to promote cure and cicatrization of the previously inflamed bone ; that it should always be remembered that in treating hip disease at a certain stage the object should not be simply rest, or fixation, or protection from jar, but actual distraction, and that traction short of this is inefficient.

The latter statement is a somewhat startling one, inasmuch as neither the authors, nor anyone in so far as we know, have treated any case by distraction for even so long a period as one day. The terms must not be confused, and the excellent results in the cases reported to have been treated by *traction* must not be credited to *distraction*.

Final Results in Tubercular Ostitis of the Knee.—Dr. V. P. Gibney[4] (New York) has records of four hundred and ninety-nine cases of tubercular ostitis of the knee, observed between the years 1868 and 1887. Three hundred of these cases have been traced to the present time, and final notes of their condition constitute the basis of their report.

Sex.—Two hundred and twenty-three females ; two hundred and seventy-six males.

Side.—In two hundred and thirty-nine cases the right knee was affected ; in two hundred and thirty-five it was the left ; in twenty-five the side is unrecorded.

Age when Disease developed.—In one hundred and ninety-seven out of three hundred and eighty-seven cases, or nearly 51 per cent., the disease developed before the age of five years ; in one hundred and forty-two, or 36 per cent., between the ages of five and ten. In thirty-nine cases, or about 10 per cent., between the ages of ten and twenty years ; in nine cases, about 2 per cent., after the twentieth year had been passed.

Involvement of other Joints.-- Of four hundred and forty-nine cases there were only sixteen, or 3 per cent., in which other joints or bones were involved. Of the sixteen, eight had spondylitis ; two ostitis of the hip ; one ostitis of the ankle ; one disease at the elbow ; one disease of the wrist and shoulder ; two affections of the other knee ; and in one the other knee and elbow and a shoulder were also involved.

Abscesses.—Of three hundred cases, one hundred and forty (46 per cent.) had abscesses.

Mortality.—Of three hundred cases forty have died; six of tubercular meningitis; fourteen of exhaustion after prolonged suppuration; three from phthisis; two from dysentery; two from amyloid degeneration; twelve from intercurrent affections not connected with the disease; and one from shock following excision. Assuming that twenty-two of these deaths are attributable to the disease, the mortality is $7\frac{1}{3}$ per cent.

TREATMENT.—Three forms of treatment have been in use: (1,) The purely expectant, involving treatment of symptoms, relief of exacerbations, irregular use of apparatus, or frequent changes of apparatus; (2,) The fixation treatment, involving the continuous use of apparatus, partially or completely immobilizing the joint, including also various forms of extension apparatus; (3,) The protective, meaning thereby immobilization of the joint until all acute signs have subsided and convalescence is assured, and the use of apparatus efficient to prevent concussion, or jar, or tremor of any kind. The apparatus chiefly used by the reporter for this purpose has been the "Thomas" knee splint.

Although it is impossible to draw a sharp line of division between these groups, still the reporter thinks the distinctions may be sufficiently drawn to admit generalizations. His conclusions are as follows:—

Expectant Plan.—Number of cases sixty; abscesses twenty-three (38 per cent.) Of these twenty-three abscess cases, fourteen recovered with motion in the joint; nine were pretty firmly ankylosed. Of the thirty-seven non-suppurating cases, thirty recovered with motion, seven were ankylosed. In all forty-four (60 per cent.) recovered with motion.

Fixation Plan.—Number of cases one hundred and forty-five; abscesses sixty-three (43 per cent.) Of these sixty-three abscess cases, forty-three recovered with motion, twenty became ankylosed. Of the eighty-two non-suppurating cases, seventy had motion, twelve became ankylosed. In all one hundred and thirteen (77 per cent.) recovered with motion.

Protective Plan.—Number of cases thirty-seven; abscesses nineteen (about 50 per cent.) Most of these, however, had abscesses before the treatment was begun. Of these nineteen abscess cases, sixteen recovered with motion, three were ankylosed. Of the eighteen non-suppurative cases all recovered with motion. In all, thirty-four (95 per cent.) recovered with motion.

Amount of motion preserved.—In sixteen of the cases in which abscesses occurred, motion over an arc of more than 90° was

preserved. In the non-suppurating cases, twenty-five could be voluntarily moved over an arc of 90°.

Relapses have been infrequent.—Of the abscess cases, only four relapsed during periods varying from seven to twenty years. Among the non-abscess cases six relapsed.

Need of Continued Support.—Fourteen (41·3 per cent.) of the abscess cases and twenty-two (7 per cent.) of the non-abscess cases continue to wear some kind of a support; that is, 12 per cent. of the entire three hundred cases seen.

Deformity.—Out of two hundred cases, in two there was complete luxation of the tibia, in one hundred and fifty sub-luxation, and in forty-eight no sub-luxation. Out of two hundred and twenty-seven cases, seventy-one could extend their limbs to an angle between 175° and 180°; one hundred and forty-one to an angle not less than 165°; and fifteen got well with deformity at an angle under 135°. The protective treatment gave the largest percentage of good results, so far as position is concerned, the fixation next, and the expectant the smallest percentage.

Epiphyseal Lengthening.—Of one hundred and sixteen cases measured, in six there was a lengthening of one inch; in fifteen three quarters of an inch; in thirty-four half an inch; in seventeen a quarter of an inch. That is to say, there was a relative increase of length of the femur in 62 per cent. of the cases.

Excisions.—Fourteen were subjected to excision. Three of these recovered with an angle of 160° or less; six at 170°; and three at 180° (perfectly straight). In two the deformity is not known. In one there is a half inch shortening; in one, one inch; in two, two inches; in one, two and a half inches; in one, three inches; and in one, three and a half inches; in two, four inches; in one, eight inches; and in four the result is not known.

The author believes that the teaching of his experience is against excision of the knee joint.

REFERENCES.—[1]"New York Med. Journ.," Oct. 21, 1893; [2]"Med. Record," Aug. 4, 1894; [3]"New York Med. Journ.," Aug. 4, 1894; [4]"American Journal of Medical Sciences," Oct., 1893.

OSTEOMALACIA.

Seeligmann treated a severe case of osteomalacia by **Porro's Operation**; the stump of the uterus was dealt with extraperitoneally. The patient made an uninterrupted recovery. While the bones were still soft extension was applied. This was begun six days after the operation and continued for eight weeks. The patient was placed upon a water-bed and counter-traction applied from above. Weights

were gradually increased until ten pounds were used. As a result of this pain soon disappeared, the body became seven inches longer, and the configuration of the pelvis was favourably affected. The kyphoscoliosis dextrans disappeared. Thus after seven years of bed-ridden life, with the most severe pains and deformities, the patient regained the power of walking, and at the time of reporting was capable of performing her household duties.

REFERENCE.—"American Journal of Obstet.," April, 1894.

Synopsis.—(Vol. 1894, p. 454.) Phosphorus.

OVARITIS.

Synopsis.—(Vol. 1894, p. 454.) Rest in bed, and for constipation a teaspoonful of the following at bedtime in a glass of water: R Soda Sulphate, ℥iv; Sulphur, ℥j; Sugar, ℥v; Ess. of Peppermint, q.s. The abdomen is rubbed with an ointment of Ichthyol and Lanoline, equal parts. Vaginal injections of Hot Water. Scarification of the os.

PACHYDERMIA LARYNGIS. *W. Milligan, M.D.*

The earliest description of pachydermia laryngis was published by Hüwermann in 1881. In 1887, Virchow[1] also published an elaborate account of the affection, since which time many papers have appeared upon the subject. In the normal larynx, the mucous membrane is for the greater part of its extent, covered by a layer of columnar stratified epithelial cells, but over portions of the epiglottis, the interarytenoid commissure, the true vocal cords and the superior surface of the ventricular bands, the lining membrane is composed of stratified pavement cells.

The microscopical changes found in cases of pachydermia consist in marked thickening of the epithelial covering, in multiplication of the papillæ, in enlargement of and increase in the number of the blood vessels, and of increase in their lumen. Pachydermic changes may take place either in the interarytenoid commissure or in the mucous membrane covering the true vocal cords, or it may exist in a generally diffuse form within the larynx. The posterior extremities of the true vocal cords are favourite sites for the development of such changes. In this position symmetrical swellings of an elongated oval shape, and generally with a slightly depressed centre, are frequently seen. According to Virchow, the small depression in the centre of the pachydermic swelling is due to the more intimate adherence of the mucous membrane to the underlying cartilage; according to Fraenkel,[2] however, to the pressure which one swelling exercises upon that of the opposite side. Chiari describes as the most frequent form a thickening and loosening of the epithelium of the interarytenoid fold and true vocal cords. This *idiopathic* form of pachydermia must be care-

fully distinguished from those *secondary* or *accessory* pachydermic changes so frequently found accompanying syphilitic, tubercular, malignant, or perichondrial affections of the larynx.

Fig. A, *Plate XVII*, represents a case of pachydermia of the interarytenoid commissure, and shows the marked thickening which takes place in the epithelial covering of the part.

Fig. B represents the tumefaction of the mucous membrane so frequently found in cases of syphilitic laryngitis. Such conditions must, of course, be carefully differentiated.

Laryngeal pachydermia is most frequently found amongst males, and especially amongst those addicted to the abuse of tobacco and alcohol. In eleven cases recorded by Meyer[3] the patients were males between the ages of thirty-five and forty. In seventeen cases recorded by Krieg the affection occurred sixteen times amongst males, of whom thirteen were given to the abuse of alcohol. MacBride[4] has recorded two cases occurring in females aged respectively seventy-two and forty-eight.

Fig. C represents the larynx of a girl, aged twenty-one, who was recently under the writer's[5] care. Her principal symptom consisted in a varying degree of hoarseness, especially in the early morning. No pain had at any time been experienced, but there was a frequent sensation as if the larynx was about to close. In addition to the pachydermic changes which had taken place, a considerable degree of laryngitis sicca existed. Such laryngeal changes are, however, rarely seen under the age of thirty, usually occurring in patients whose ages range from thirty-five to forty-five years.

The condition of pachydermia is regarded by most laryngologists as being of a purely benign nature. Klebs,[6] however, takes the view that it is the frequent forerunner of laryngeal carcinoma. The two processes are, however, clinically and histologically distinct. In malignant disease there is true epithelial proliferation, whereas in pachydermia there is no true proliferation, but an hypertrophy of the pavement epithelium. It must be be borne in mind, however, that a pachydermatous process may be grafted upon a malignant basis. The symptoms of idiopathic pachydermia are few. There is, as a rule, considerable aphonia, but this will, of course, depend upon the power of coaptation of the vocal cords during phonation. Pain upon swallowing is an occasional symptom, as also is a certain amount of dyspnœa, especially upon exertion.

The appearances presented upon laryngoscopic examination will vary according to the exact portion of the larynx which is affected. Where the condition is generalised, the mucous membrane will be

Fig. A.

Fig. B.

Fig. C.

Daniel[illegible] & [illegible] London.

found to be thickened and chronically congested. Where the interarytenoid fold is mainly affected, the mucous membrane will be found thickened, swollen, and corrugated during phonation. In those cases where the posterior extremities of the true vocal cords are mainly involved, symmetrical oval swellings of an elongated shape, red or pinkish red in colour, and one or both depressed about the centre, will be seen. In cases where this small depression is unilateral, it will usually be found upon the left side. In eight cases, however, recorded by Kausch,[7] the depression in the centre of the swelling was found five times upon the right side, and three times upon the left side.

TREATMENT.—The treatment of pachydermia laryngis is always difficult. Where patients have indulged too freely in the use of tobacco and alcohol, abstention from these articles must be enjoined. Rest to the larynx is necessary. The internal administration of **Iodide of Potassium** in small doses is strongly recommended by some authorities. Where the changes are mainly confined to the interarytenoid fold and the vocal cords, the best local applications will be found to be dilute solutions of **Lactic Acid** or **Iodine.** Where nodules of considerable size have formed, removal by means of cutting forceps may be adopted, followed by topical applications. In the treatment of the typical form of pachydermia as it affects the vocal cords, Chiari[8] strongly recommends **Electrolysis,** a current of from 10 to 12 milliampères being used for from three to five minutes at a time, as employed by Moll, of Arnheim. Scheinmann[9] claims to have had good results from laryngeal applications of common **Salt Water** or dilute **Acetic Acid,** either by spray or by injection. He also recommends the inhalation of steam during prolonged periods. Tissier[10] recommends the removal of the hypertrophied epithelial masses by specially constructed forceps, whilst Michelson speaks favourably of the employment of **Leiter's Cold Coil** placed over the larynx.

REFERENCES.—[1] "Berlin. klin. Woch.," 1887, p. 585; [2] "Deut. Med. Woch.," 1889, p. 30; [3] Ibid., 1890, p. 928; [4] "Edin. Med. Journ.," April, 1893, p. 911; [5] "Journ. of Laryngol.," etc., Aug. 1893, p. 370; [6] "Deut. Med. Woch.," 1890, p. 537; [7] "Münchener Med. Woch.," 1892, p. 515; [8] "Journ. of Laryngol.," May, 1894; [9] "Berlin klin. Woch.," 1891, p. 1097; [10] "Annal. des Maladies de l'Oreille," July, 1891.

PANCREAS (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Nimier[1] points out that the good results obtained by establishing a fistula between the dilated bile-duct and the small intestine, suggest the possibility of dealing successfully with obstruction and dilatation of the pancreatic duct by an analogous procedure. The chief difficulty

at present is the impossibility of diagnosing with certainty obstructive dilatation of the duct. In the formation of such a fistula he considers the use of Murphy's button would be indicated. It is also suggested that it might be found possible to take advantage of the anatomical proximity of the duodenum and pancreas and to drain pancreatic cysts into that bowel.

Körte[2] has had under his observation four cases of suppuration and necrosis of the pancreas, and one case which did not go on to suppuration. Two of the cases operated on recovered, two died; the first case was diagnosed in the course of treatment, the succeeding ones were diagnosed. The patients were adults, aged from twenty-two to forty-eight years, three women, two men. In one case there was almost complete necrosis of the gland; in two, partial necrosis, with suppuration; in one, suppuration. Two of the patients were corpulent. The symptoms observed coincided with those usually described. They are, sudden severe illness usually in a patient seemingly in good health, or after slight digestive derangement, vomiting, pain in the abdomen extending from the epigastrium, great prostration, usually constipation, abdominal distension, and sense of pressure. The acute stage may very easily be mistaken for some other affection—gastro-duodenitis, poisoning, biliary colic, peritonitis, or intestinal occlusion (six cases have been subjected to operation). Sometimes the symptoms subside in a few days, then in one to three weeks recur. Death may occur in the acute stage from collapse (usually in the hæmorrhagic form), or the case becomes sub-acute or chronic, and the patient slowly sinks from fever, diarrhœa, discharge of pus per anum. In some cases there is jaundice and bronzing of the skin. Two cases were recorded—Chiari—in which recovery resulted after the necrosed pancreas was passed per anum. In the sub-acute stage a symptom can be observed which is mentioned in the literature, and which was present in all the author's cases—a swelling in the epigastrium between the stomach and colon, extending to the left, and in some cases to be followed to the left lumbar region. At times the pus in and about the pancreas escapes into the bursa omentalis, where it may form an encapsuled abscess, or it may burrow behind the peritoneum. Post-mortem observations and injection of colouring matter into the pancreas show that pus may pass in the following directions: (1,) Distension and rupture into the bursa omentalis; (2,) Burrow down to the left side behind the descending colon; (3,) In a few cases to the right; (4,) Along the spinal column down between the layers of the meso-colon or mesentery.

The diagnosis is based on the characteristic commencement of the

affection, followed by the appearance of the epigastric tumour or swelling in the left lumbar region. Purulent escape into the bursa omentalis may occur in other affections, and this lumbar swelling must be carefully distinguished from a perinephritic abscess. Exploratory puncture is not without danger in the first form, and should only be made immediately before operation. In retro-peritoneal extension it is advisable. The pus is thick and contains a large amount of fat, at times, tallow-like masses of fat, and necrosed shreds, usually fine, fattily degenerated pus corpuscles. The treatment is settled by the diagnosis : in abscess in the bursa omentalis, laparotomy, suture of the walls, drainage, a counter opening to be made if possible ; in the retro-peritoneal form, incision in the lumbar region and freeing of the posterior peritoneal wall till the abscess is reached.

Mr. W. H. Brown[3] records a case of traumatic cyst of the pancreas. The patient, a youth aged seventeen years, was, in March 1893, crushed between the buffers of a locomotive and a truck. Shortly afterwards he was tapped on the left side below the umbilicus and seventy ounces of blood-stained fluid removed ; six weeks later the paracentesis was again performed and sixty ounces of fluid withdrawn. Improvement followed until June 27th, when he fell from a horizontal bar and at once felt very ill. His symptoms were now severe intermittent epigastric pain, swollen, tense and tender abdomen, and constipation.

On June 28th abdominal section was performed and about five pints of bloody serum evacuated ; the abdomen was drained, a considerable quantity of fluid escaping daily. On July 4th, pain was complained of in the abdomen, and signs of a fluid collection in the upper abdomen rather to the left of the middle line were observed. On July 6th the abdomen was opened, and after raising the stomach and omentum a tense cyst was exposed and evacuated of three pints of simple blood serum. The cyst wall was stretched to the margins of the abdominal incision and a drain tube inserted. The discharge was free, and three weeks after the operation was found to contain trypsin, steapsin, amylopsin, and milk-curdling ferments. Seven weeks later the patient had entirely recovered.

Mr. Brown considers that two distinct lesions were caused by the injury, one in the general peritoneal cavity and the other within the capsule of the pancreas, and that the withdrawal of fluid at the operation after the second injury, by relieving the pressure, allowed the formation of the true pancreatic cyst. He also draws attention to the fact that had he aspirated in this case the stomach must have been wounded.

A somewhat similar case was reported by Mr. Angus Martin, of North Shields, and Mr. Rutherford Morrison in the "Edinburgh Medical Journal," July, 1893; and in last year's "Annual" we described an analogous case, but in that case the general peritoneal cavity had become invaded by rupture of the primary cyst through the anterior layers of the great omentum.

In a paper on the above subject Dr. Theodore Fisher[4] writes: "Pancreatic cysts have very frequently followed an injury, and it has perhaps been somewhat too hastily assumed that these cysts must have originated in a direct injury to the pancreas. There are, however, one or two points that militate against such a view. First, the pancreas is by its situation protected from injury; secondly, the cyst does not usually quickly develop after traumatism, but appears somewhat suddenly at the end of several weeks, months, or even years; thirdly, some sanguineous abdominal cysts that have developed after injury have been proved on post-mortem examination to have no connexion with the pancreas." Dr. Fisher suggests that these cysts may be the result of serious nerve lesions due to the injury and not to direct traumatism. In support of this theory he advances the following points:—

(1,) The symmetry of hæmorrhages that occasionally destroy the supra-renal capsules suggests a central cause.

(2,) Hæmorrhage into the pancreas is frequently associated with spots of fat necrosis over the peritoneum, which, as suggested by Dr. Rolleston, may be trophic.

(3,) A peripheral lesion may give rise to a central nervous lesion as is sometimes the case in paralysis agitans and progressive muscular atrophy.

(4,) The taking of one's wind by a blow in the pit of the stomach reveals a peculiar sensitiveness of the nervous system connected with the epigastrium to peripheral impressions.

The author regards pancreatic cysts merely as manifestations of hæmorrhage around the pancreas, which may arise in the gland itself or its neighbourhood and affect the gland secondarily by pressure. The main seat of hæmorrhage appears to be usually the transverse meso-colon. Although suggesting the indirect causation of pancreatic cysts he considers that the subacute peritonitis and effusion, which sometimes co-exist, is more probably directly due to the injury.

Dr. Charles McBurney,[5] at a meeting of the New York Surgical Society, reported a successful case of operation upon a case of cyst of the pancreas. He expressed the opinion that the operation *à deux temps* was preferable to immediate incision in these cases.

McBurney believes these cysts to arise mostly from some portion of the duct. The condition was associated with glycosuria which was not relieved by operation.

That aspiration may at times be sufficient to bring about a cure the ensuing case would seem to prove, nevertheless we feel that incision and drainage is, as a rule, decidedly to be preferred.

Mr. J. Lynn Thomas[6] reports a case of traumatic pancreatic effusion into the lesser sac of the peritoneum successfully treated by aspiration.

The patient, a boy aged two years, had been knocked down by a cab, the wheel passing over the abdomen. Three weeks after the injury a bulky fluid tumour had developed in the epigastric umbilical and left hypochondriac region (see *Fig.* 30).

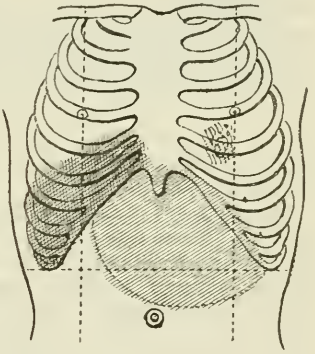


Fig. 30.—The area marked with parallel lines was dull on percussion and had a distinct thrill. The dulness passed into that of the liver and that of the heart.

On aspiration thirty-eight ounces of altered pancreatic secretion were removed. Eighteen months after the accident the patient was in good health, well-nourished, and nothing abnormal could be felt in his abdomen. Mr. Thomas considers that aspiration in a young child, in certain cases of traumatic effusion into the lesser peritoneal cavity, is safe and likely to be as efficacious as other methods of treatment, bearing in mind the curative effect of aspiration in empyema and other pleural effusions in children.

At a meeting of the Clinical Society of London, Dr. Churton[7] (Leeds), read a paper on a case of pancreatic cyst associated with diabetes; the cyst was incised and on death a year afterwards atrophy of the pancreas was found, the gland being reduced to a mere mass of fibrous tissue.

Lichthiun[8] records an interesting case of atrophy of the pancreas in which the diagnosis was correctly made during life. Fourteen years before, the patient had suffered for six years from recurring attacks of severe colic, associated with fever and vomiting. For the next seven years he enjoyed good health, and then began a year ago to suffer from obstinate diarrhœa and symptoms of diabetes, ultimately succumbing to pulmonary tuberculosis. On post-mortem examination the pancreas was found cirrhosed and showed advanced, though not total,

atrophy of the glandular parenchyma. The canal of Wirsung and its tributaries were dilated and contained mortar-like concretions.

The diagnosis was made on the following grounds :—

(1,) The severe colic and violent epigastric pain, vomiting and fever.

(2,) The occurrence of diabetes several years later.

(3,) The peculiar diarrhœa and the fatty appearance of the stools.

Acute Pancreatitis.—Dr. J. E. Paul,[9] at a meeting of the Clinical Society of London, read notes of a case in which after death the peritoneum covering the pancreas was found to be glued by recent lymph to the posterior surface of the stomach. The gland was much swollen and hæmorrhages were to be seen, most numerous in the tail. Microscopically the pancreas was seen considerably disintegrated, with total destruction in parts of the structure of the organ. Numerous hæmorrhages were to be seen, and clumps of crystals of hæmatoidin. The symptoms during life were sudden onset of severe colicky pain in the abdomen with vomiting, slight abdominal distension, and fever. No sugar in the urine. The patient died from collapse four days after the onset of symptoms.

REFERENCES.—[1] "Rev. de Chir.," July, 1894 ; [2] "Med. Chronicle," Sept., 1894 ; "Ber. ü. d. Verhandl. d. Deutsch. Gesell. für Chirurg.," xxiii. Kong., April 1894, p. 57 ; "Beit. z. Centralblatt für Chirurg.," No. 30, 1894 ; [3] "Lancet," Jan. 6, 1894 ; [4] Ibid., Jan. 27, 1894 ; [5] "Annals of Surgery," April, 1894 ; [6] "Lancet," March 31, 1894 : [7] Ibid., June 2, 1894 ; [8] "Berlin. klin. Woch.," No. viii., 1894 ; [9] "Brit. Med. Journ.," Oct. 1894.

PARALYSIS AGITANS.

Synopsis.—(Vol. 1894, p. 457.) **Duboisine**, 2 to 3 deci-milligrammes three times a day hypodermically. **Sodium Borate**, 4 grs. four times a day, increased to two or three times the dose.

PARALYSIS (Infantile). *Robert Jones, F.R.C.S., E., Liverpool.*
John Ridlon, M.A., M.D., Chicago.

The Surgery of Infantile Paralysis.—In dealing with this subject we would limit the definition of infantile paralysis to those disabilities resulting from acute anterior polio-myelitis, and would only exceptionally refer to other classes, and that chiefly with the object of emphasising the differential diagnosis. We would however mention one form of paralysis which may confront any practitioner, the knowledge of the significance and treatment of which is of considerable advantage. The child is born with an affection of the upper limb, which is observed in a fully extended position ; the arm rotated inwards and the hand flexed, generally containing the thumb within

its grasp. If such an arm be rotated outwards by the surgeon, on release it immediately and almost forcibly resumes its abnormal posture. This condition is by no means uncommon and is an obstetric form of paralysis due always to injury during birth, and but rarely accompanied by paralysis of the leg (*Fig.* 31).

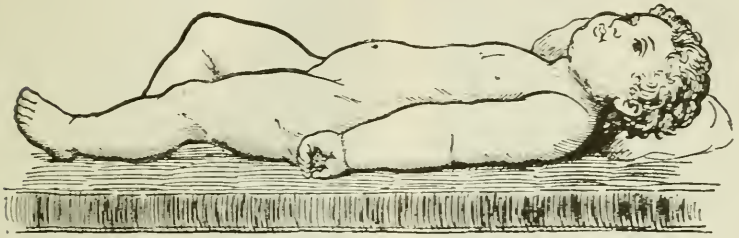


Fig. 31.—Showing the extended arm and flexed hand.

Untreated, it is liable on occasions to last for many months, and we have seen cases where we have been consulted for the thumb and hand flexion even as late as at two years of age. The treatment is simple and very effective, and consists in the reversal of the erratic posture. Instead of allowing the arm to remain rotated inwards and extended and the wrist and fingers flexed, the indications are to keep the arm rotated outwards, the elbow flexed and the wrist and fingers hyper-extended, while the muscles which have been overcome by their antagonists should be stimulated by friction and massage. Recovery generally takes place in about fourteen days, and this is not in the least aided by electricity.

The spinal paralysis of children to which the term polio-myelitis refers is almost exclusively a disease of the second and third years, although cases have been recorded where the symptoms have been pronounced during the first few days of life, and other stray reports may be found where symptoms identical with those of polio-myelitis have occurred between the ages of six and twenty. The greater number of cases occur during the second year, and principally during the hot summer months. Well nourished and puny children are alike subject to these attacks, and no conditions that we know of can be defined as having an ascertained causal relationship to it. Certain it is that we have noted the frequency with which the condition is found amongst the children of mill operatives and in manufacturing communities generally, and we cannot tell whether this is due to the late marriages and the employment of women, or to the degenerate

nervous systems of the parents caused by poor food, long hours and wretched hopeless lives. It would appear that any condition which renders the nervous system of the infant vulnerable, whether acquired or inherited, due to personal privation or sickness, may be sufficient to invite an attack when extreme summer heat, teething, or intestinal irritation, be added. We have been unable to trace amongst the causative agents a syphilitic, alcoholic, or tubercular diathesis.

A large proportion of cases which come for treatment are not supplied with a history of the onset of the paralysis. Mothers cannot remember, and if they do, they cannot supply detail. In our experience the early history will coincide with one of the following groups :—

Group 1.—A child is suddenly taken ill. The symptoms are those of a feverish cold. Pain is also complained of in the head and back. There is often a little diarrhœa. For four or five days the temperature varies from 99° to 102°. On examining the limbs paralysis varying in degree will be found.

Group 2.—A child is irritable and "out of sorts" and is put to bed. In the morning it is found that paralysis in one or more limbs has occurred. In other respects the child appears to be well.

Group 3.—A child is suddenly seized with vomiting and convulsions, which may or may not be repeated. This condition may last for a few hours or for several days. As the acute symptoms pass off, the paralysis is noted. It may affect any muscle, or any group of muscles, or any number of muscular groups.

The greater number of cases in our experience correspond in their origin to the first division, while only a very few exhibit cerebral symptoms. In nearly all, the onset of the paralysis is sudden and attains its maximum at once. Subsequent events are uncertain. Sometimes, in a few days several of the paralysed muscles show signs of improvement (*Fig. A, Plate XVIII*). If the arm and leg or both legs be paralysed, recovery may take place completely in all excepting perhaps a single muscle, or a single group of muscles, or a single limb. This may occur in a few weeks, but more generally in a few months. In the arm the deltoid muscle is that most often affected, and frequently associated with it are the biceps, brachialis anticus, supinator longus, and extensors of the fingers. In the leg the antero-external group of muscles, the long extensor of the toes, tibialis anticus, the special extensor of the great toe and the long and short peronei, are the muscles most frequently affected ; or the paralysis may include all the muscles of both lower extremities, or one arm and leg, while even some of the trunk muscles may be involved.

Fig. A.

Fig. B

Fig. C.

Fig. D.

Paralysis affecting a whole lower extremity usually does not include the psoas and iliacus muscles, which are still able to swing the limb forward (*Fig.* 32). Faradism is diminished or lost while the galvanism formula is reversed, thus exhibiting the reaction of degeneration.

We need only refer in a few words to the pathology in order to make clearer the symptoms. It consists of an acute inflammation of the grey matter of the anterior cornua. There have been only two or three post-mortem examinations in fairly recent cases. The one is that reported by Dr. Drummond, where a child five years of age died after a few hours' illness. The spinal cord in the region of the fourth and fifth cervical nerves presented an undue redness. The vessels to the cornua were distended. By the aid of the microscope the capillaries were found to be distended, small extravasations in the grey matter, swelling of the neuroglia and ganglion cells, the processes from the cells being indistinct.

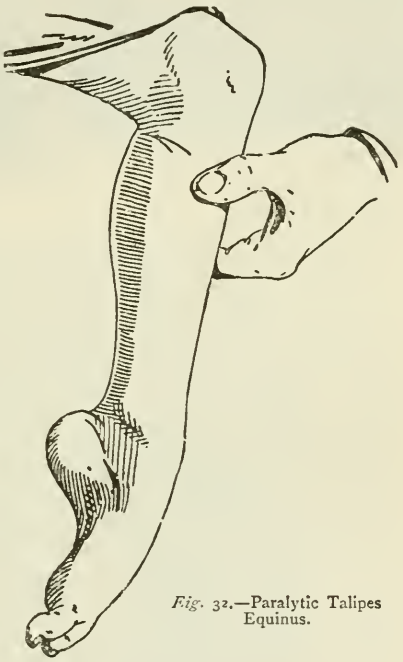


Fig. 32.—Paralytic Talipes Equinus.

Damaschino examined the cord of a child two and a half years old who died twenty-six days after an attack. The arm and leg were paralysed. He found spots of red softening in the anterior cornua of the cervical and lumbar regions. The blood vessels were distended, there was marked atrophy of the cells and of the myeline sheaths of the anterior root fibres. Dr. Charlwood Turner has reported changes of a similar character, but more advanced in the case of a child who died six weeks after the paralytic onset.

In the absence of an accurate pathology we may rest assured that there is a hyperæmia of the cord which has the effect of destroying temporarily, or for ever, certain ganglion cells in the anterior cornua.

These cells having trophic as well as motor functions, any injury to them gives rise not only to certain paralyses, but to impeded circulation and arrest of growth.

When we examine at a late period therefore, we find a shrivelled limb with wasting out of all proportion to that caused by mere desuetude (*Fig. B*). It feels cold to the touch, is shorter than its fellow, and usually presents a mottled blue colour. When the affected member is not retained in the normal position during the acute stage it assumes a position of more or less deformity, the affected muscles being stretched by their unopposed and healthy antagonists. For some time this deformity can be readily overcome, but sooner or later this ceases to be possible, structural shortening having taken place in the healthy or less affected muscle.

The surgical treatment of the paralysis should commence as soon as a diagnosis is made. Space will not admit of a detailed description of the mechanical and operative treatment resorted to in the early and late cases. A few of the more important points however will be pointed out. We are very apt, basing unconsciously our practice on the pathology of the ailment, to strike a pessimistic note in our references to polio-myelitis. This is unfortunate and not justifiable. When we state that if practitioners were alive to the therapeutic and mechanical agencies open to them that we would fail to find any case of paralytic deformity following polio-myelitis, it is a very strong but very true assertion. When we further add that were the contracting deformities no longer amongst us, that the chief impediments to the restoration of useful limbs would be also gone, we only very temperately state the position of things. And yet it is rare to find a case of old infantile paralysis which has affected more than a mere group of muscles, without the inevitable deformity. It is not as if the worst deformities occurred in the most hopeless class of cases; on the contrary, the presence of marked deformity bespeaks certain active groups of muscles.

We will divide the surgical treatment of these cases into three divisions: the mechanical preventive treatment; the mechanical treatment of deformity; and the operative treatment.

The preventive treatment relates to the prevention of deformity, and aims at disallowing from faults of posture any advantage to the stronger and less affected groups of muscles.

The principles of treatment in the arm and leg are identical, but for convenience we will deal with the limbs separately.

(1,) *The Arm.*—As we have shown we may have any, or all, of the muscles affected, but it is very unusual to find more than certain

Fig. E.

Fig. F.

Fig. G.

groups (*Fig. B*) ; in the upper arm the deltoid, biceps and brachialis anticus, and often the triceps ; in the forearm the supinator longus and the extensors of the fingers (*Figs. C, D*, and *Fig. E, Plate XIX*). We will be helped in deciding in our preventive treatment if we try to recall the old untreated cases which we have seen.

If the upper arm has been mainly affected we will notice first of all a total inability to flex the elbow, and a lax condition of the shoulder joint due to deficient muscular control. We can place the head of the humerus into almost any of the classic dislocations. If the lower arm be mainly at fault the deformity nearly always is a flexion of the wrist, with a varying degree of finger flexion.

What we have to do therefore is to anticipate and therefore preven these disabilities (*Fig.* 33). The wrist should be kept hyper-extended

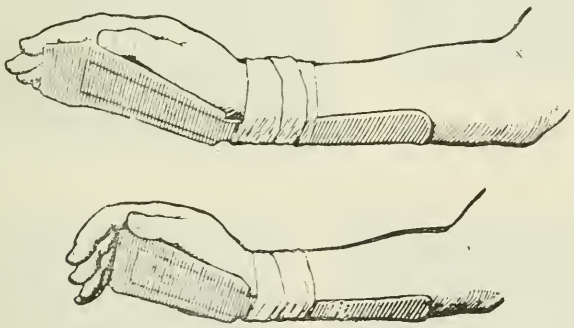


Fig. 33.—Splints for keeping hand hyper-extended in wrist-drop.

by means of a light splint ; the elbow flexed by means of a bandage or leather halter applied round the wrist and neck, and the head of the humerus should be kept in apposition to the glenoid cavity. So much for the mere mechanical routine. This should be aided three or four times a day with massage shorn of the occult and mystic. The nurse or mother should be instructed how to beat and pinch every bit of affected muscular tissue for about ten minutes at a time. What is aimed at is a bruising of the muscles. We generally get the attendant first to make three or four firm pinches with all the fingers at the deltoid in three or four places ; the same with the biceps, triceps, etc. Then with the end of the fingers he gives the whole arm a short beating, then a good rub. If this be done constantly the circulation of the arm is surely improved ; the deltoid and biceps, if partial recovery in the motor area should occur, have not to recover from the terrible dis-

advantage of being overstetched and lengthened, and any undue advantage which posture and shortening of muscles might give to the flexors is certainly avoided. How long should such treatment continue? For fully twelve or eighteen months, unless marked indications of unusually rapid recovery are observed! If the child should move the arm freely, splint and all; or easily lift its fingers from the splint which already extends them, a trial might be given the arm (*Fig. F, Plate XIX*). Should inequality between muscle groups become evident, treatment should at once be resumed.

(2,) *The Leg.*—The deformities which we meet with in neglected cases are: t. equinus; t. eq. varus; t. equino valgus; t. varus; contraction of knee; contraction of hip; knock knee.

These deformities are often accompanied by abduction and eversion. The same instructions should be followed with regard to muscle beating and muscle pinching, as have been given in the case of the arm. Friction should be most perseveringly employed, inasmuch as the nutritive deficiences in the leg are more pronounced than in the arm. As soon as the child is old enough to walk (and until it is old enough to walk it should not be allowed to bend its knee) we should place a Thomas's calliper splint both to facilitate progression and to so develop the psoas and iliacus as to enable them to easily push the limb steadily forward. The boot in which the splint is fitted keeps the foot from any equinus tendency, and should any recovery take place in the cells governing the extensors of the foot, the quadriceps or the sartorius, the disability caused by stretching and elongation of muscle-tissue, will not have to be contended against, and flexion deformity at the knee will be impossible. We endeavour therefore to prevent deformity and disability in the foot by keeping it flexed, so strengthening the dorsal flexus. This is equivalent to antagonising the contending action of gravity which emphasises the deformity of the wrist, elbow, foot, and knee. At first sight one would think that gravity would never tend to cause flexion of the knee, but when we consider the assistant effort of the psoas and iliacus the position of the leg becomes fully explained. Should both limbs be affected the same treatment should be adopted, but if there be a tendency during the later months to contraction at the hips it may be necessary to lay the infant upon a modification of a double Thomas hip splint with rectangular supports for the feet.

Treatment of Wrist Drop of Old Standing.—In dealing with old neglected cases of infantile paralysis we have to carefully discriminate between the loss of power in a muscle and the loss of utility in it due to structural shortening (*Figs. B, C, Plate XVIII*). This can best be

Fig. H.

Fig. K.

Fig. I.

Fig. L.

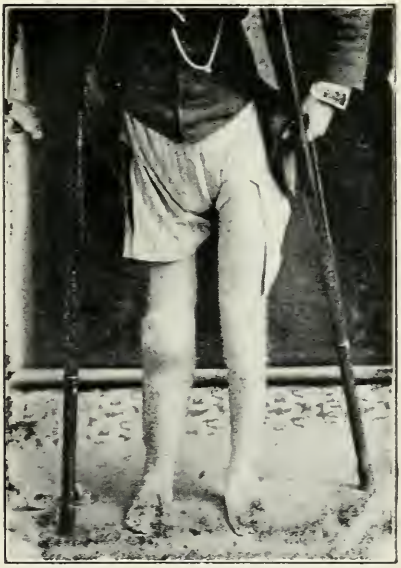


Fig. M.

demonstrated by dealing with our proceedings in the case of the common paralytic deformity known as dropped wrist. It will astonish most physicians and surgeons when we state that in the vast proportion of cases where the flexor muscles are contracted and where there is no power of extension of the wrist, recovery is attainable after many years of disuse. Before entering into any explanations of the fact, we will, contrary to the usage of the "Annual," give outline sketches of three cases which will serve as types.

V. L., aged twenty, residing at West Kirby, was brought to one of the authors in 1885. For eighteen years he had not used his wrist, which had remained flexed at an acute angle. The patient was able to moderately extend both wrist and fingers by using the other hand to do it. It would immediately resume the old position on the removal of the force. He was able to hold light objects in his hand if carefully placed there, so long as the position of acute flexion was maintained. During his early years he had undergone much treatment, but for ten years the condition had been looked upon as hopeless. He had spared no expense in endeavouring to obtain aid, and had consulted some of the best of our physicians and surgeons. Apart from the usual applications of electric remedies, warmth, etc., nothing was suggested, and the prognosis was sufficiently hopeless to discourage him from all effort. On examining him we assured him that in from twelve to eighteen months, co-ordination would return, and he would be able to use his hand and wrist for all practical purposes (*Fig. G, Plate XIX*). In less than two years he was carving wooden organ pipes, and had full restoration of movement in the wrist and fingers. This case was exhibited at the Liverpool Medical Institution.

A young lady, aged seventeen, resident in Southport, was sent to one of the authors by his friend, Dr. Chas. Lee, of Liverpool. For fourteen years, following an attack of polio-myelitis, she had not been able to use her hand or wrist excepting very imperfectly in a fully flexed position. Her social position was such that no expense was spared in endeavouring to overcome the deformity and to render the limb useful, but with no success, and for ten years all treatment had been suspended. She almost apologised for consulting us, as she felt so convinced of her utter hopelessness. We were able, after a short examination, to give a hopeful prognosis, and in less than two years she recovered the use of fingers and wrist, the hand, however, in repose maintaining some slight adduction (*Fig. H, Plate XX*).

S. B., a youth of fifteen, residing in Liverpool, was the subject of infantile paralysis, involving the upper arm and scapular muscles,

and to a lesser degree those on the extensor aspect of the forearm (*Fig. B, Plate XVIII*). The arm remained fully extended, with wrist and fingers flexed. Quite casually, the mother while being treated for another ailment, told her trouble regarding her son. For some years treatment had been discontinued, as it had proved of no benefit. Endless journeys had been paid to men of reputation, and finally for two years the little patient had remained in the metropolis in order to undergo gymnastic evolutions under expert advice. We promised a useful hand, but after examination were unable to speak confidently of the arm (*Fig. F, Plate XIX*). In twelve months the boy had so far recovered as to be able to keep the wrist in an extended position and move the fingers freely in the normal range. Without splints on, the biceps had so far recovered as to be able for a few seconds to hold the forearm in a position of right angles, and with an effort the triceps could be seen to contract. The thickness of forearm and wrist had very obviously and considerably increased (*Fig. I, Plate XX*). He continues to improve.

The bare record of these cases, without a note of explanation, would naturally be received by our readers with incredulity, and this would last just so long as the explanation was withheld. The real fact, however, is that the large majority of these patients are not suffering so much from paralysis as from a want of equilibrium between muscular groups due to certain advantages gained by the stronger sets. Let us take any one of the three cases I have reported, and examine the hand. We will first flex the fingers still more acutely and we will find that the extensors, while the wrist is flexed, will sufficiently act to carry the fingers to the position from which they were further flexed. From this we learn the key to treatment: for we know now that the motor cells in the anterior cornua governing the extensors are not totally destroyed, and that there is some disability greater than the actual paralysis holding the hand down. That this is due primarily to a shortening of the flexors and an elongation of the extensors is practically certain. How this comes about we have no desire to enter into now. Certain it is that treatment must consist of a reversal of the conditions. In other words we must stretch the contracted tendons and shorten the elongated ones. This needs no operative procedure and may be made to depend entirely upon the simplest mechanical contrivance.

The hand is first slightly extended and a splint applied. In two or three days it is more extended, until at the end of a week or two it is kept in the position of full extension upon a plain angular iron splint (*Fig.* 33, and *Fig. I, Plate XX*). The effect of this is to stretch the

Fig. P.

Fig. Q.

contracted flexors and to keep in a lax condition the overstretched and lengthened extensors. These extensors, as the months roll on, to use a nautical expression, "take in their slack," in other words, they become shorter. The patient, when asked to move his fingers, will be able as recovery goes on, to hold the hand in the extended position, and now that the balance between the two groups of muscles has been restored, the cure has been practically effected (*Fig. F, Plate XLV*). During the whole time, however, that the arm is in a splint, active treatment must be continued. In the first place, no bandage or plaster should surround the arm excepting at the wrist where no muscular tissue exists. Every day the fleshy portion of the extensors should be several times energetically beaten. By such simple treatment as this, which can be practised in the country as well as in the town, and in private practice equally with the hospital, can these neglected and forlorn cripples be made useful and happy. We will not enter into the treatment of neglected paralysis of the upper arm, as it is based on principles identical with those already enunciated, and we will now proceed to discuss treatment as applied to the lower limbs.

Treatment of Paralytic Deformities of Lower Extremities.—In this section we will not discuss the treatment of the various forms of club foot acquired by paralytic contractions, but will confine ourselves to those conditions which essentially prevent a patient from walking. In other words we will discuss the problem of *how to make a paralytic walk.*

We will take, first, the patient who merely suffers from paralysis of the extensor longus digitorum and its accessories. He suffers from drop foot due to contraction of the calf muscles and complete or partial paralysis of the dorsal flexors. We first correct his equinus deformity, place his foot in a boot with an iron stem up the back of his leg, so constructed as to prevent extension of the foot during walking, or even better still is the Judson brace. Massage here as elsewhere.

Equally common but more serious are those cases where the whole limb is paralysed, cold and discoloured. Such cases may be seen with their crutches almost at any time. Unable to stand on the limb except by a balancing movement, they generally develop a contraction of the knee, and may be noted by a peculiarity a number of them have of keeping their foot curled around the crutch during progression. It is easy to make the lot of such much more endurable.

In the first place, if there be equinus one divides the tendo

achillis. If valgus, or other deformity, one corrects it or them in the usual way, and then by means of a Thomas knee splint, one endeavours to correct the contraction of the knee. And here we may mention that this contraction may be attacked either by the simplest mechanism or by a division of tendons. Dr. Ridlon generally divides and straightens; Mr. Jones straightens by the use of the Thomas splint and pressure pads. Either method will do. As soon as the limb is straightened a cloth top-boot with sufficiently thickened sole is applied, and the Thomas splint cut down so as to run into the heel of the boot. The patient is then instructed to practise walking, and very shortly, with a perineal crutch in the form of a splint, he is enabled to dispense with the ordinary crutch. Sometimes, as is depicted in the drawing (*Fig. R, Plate XXII*), we have one paralysed limb to deal with and considerable mechanical defect in the other. The patient depicted was sent to us in order that the right leg might be amputated. His left ankle was inverted, and handicapped him in his endeavour to walk (*Fig. K, Plate XX*), and there appeared to be some paralysis of the tibialis posticus. His left leg was absolutely powerless and flail, with an extreme valgoid deformity of the ankle. After a very few weeks' treatment the inversion of the left and the eversion of the right foot were corrected, a calliper affixed to his right leg and a side iron to his left boot (*Fig. Q, Plate XXI*), and now he is able to progress short distances without crutches, and the photo (*Fig. K, Plate XX*), when compared with the photos (*Figs. L* and *M*), will at once explain the difference in his appearance.

A similar improvement is noted in the case S. A., if *Figs. N* and *O* be compared with *Figs. P* and *Q, Plate XXI*, and also by comparing the photo of a very helpless paralytic (*Fig. R*) with that taken after treatment (*Fig. S, Plate XXII*).

Of yet greater interest are those cases where we find the patient is only able to crawl along. By consulting a series of photographs the reader will see the case of E. A. H., of Milnthorpe, Cumberland. When he consulted us he was only able to crawl from place to place. He was eight years old and had been seized with polio-myelitis at the age of three-and-a-half. Treatment of every kind had been applied, and for several weeks he had been an inmate of a large Scotch Infirmary. As is shown (*Figs. T* and *V, Plate XXII*), on being held by an assistant we were able to note the fact that he had acute flexion deformity of both hips, flexion of the knees, genu valgum, and double talipes equinus. Acting on the principle emphasized, we first endeavoured to correct the deformities. One morning we divided his heel tendons and straightened his foot, and then we

Fig. R.

Fig. S.

Fig. T.

Fig. V.

applied an iron frame, not unlike a double Thomas hip splint, with two bars running along the outside of each stem, reaching from the thigh wings to the leg wings. Upon this the little patient was placed and bandaged, the two side bars governing his knock-knee and the rest ordained to correct the knee and hip flexions. During the first week on fixing the legs down, the shoulders remained five inches from the splint and had to be supported by a pillow. This will convey an idea of the acute flexion of the hips. The first photograph (*Fig. X*, *Plate XXIII*), was taken fourteen days after the commencement of treatment. We observe the marked lordosis even then, and the feet now at right angles to the legs. Seven weeks later (*Fig. Y*) we notice the diminishing lordosis due to the decreasing flexion at the hips, and a few months later we see him lying unsupported on the table (*Fig. Z*). The genu valgum is quite corrected, the flexion at the knees quite gone, the hips almost straight, and the feet at right angles. Later, he has his walking splints applied (*Fig. W*), and now by the aid of his psoas and iliacus on each side he commences to use his limbs.

Such cases as these teach us to be hopeful, and to be careful to discriminate between muscular contractions and absolute paralysis. They also clearly show the importance of rescuing any muscle, be it partially paralysed or not, for the purposes of locomotion or general utility.

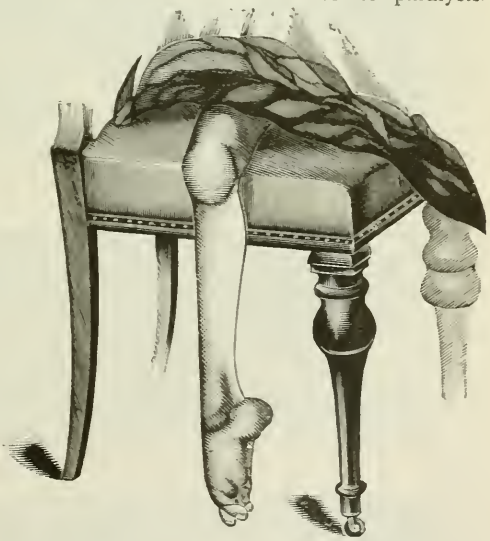


Fig. 34.—Flail knee and ankle.

It is impossible in our limited space to discuss in full detail the mechanical treatment of all the various deformities dependent on paralysis. We have only attempted to sketch a general outline.

The Operative Treatment of Flail Joints.—The authors recommend where a joint is quite flail and where there is absolutely no muscular government, to approximate as closely as possible the leg

to the splint, which otherwise it is destined to carry for life. This is done by partially anchylosing the ankle, and completely anchylosing the knee and allowing the psoas and iliacus to carry the leg in one piece just as it would carry (in the case of an amputation through the thigh) an artificial limb. Such an operation would be employed in the case of A. K. (*Fig.* 34).

The operation practised by Robert Jones consists in opening the joint, and with a scalpel or sharp gouge, peeling the superficial layer of cartilage off the whole articulation in the case of the ankle, and gouging the bone in the case of the knee, keeping the joint completely at rest for some weeks subsequently, and for a long period fitting the limb with a simple apparatus which will enable the patient to walk without throwing a strain upon the newly fixed joints. An excision is more than the case requires, and involves a greater sacrifice of tissue than an already shortened limb can spare. To expose the knee, make an incision across the front of the joint, covering fully half its circumference, and curved so as to pass below the lower end of the patella. The flap is turned up and all the vessels ligatured. Next, remove the semi-lunar cartilages, and with sharp, short-bladed knife or gouge, peel away the cartilages and the underlying layer of bone, so as to leave a raw surface over the whole of their extent. The crucial ligaments are generally left intact. The structures are then carefully reunited by deep and superficial sutures, no drainage tube, of course, being employed, and the wound is well covered with perchloride wood wool wadding.

The operation may be carried out in the ankle joint in one of two ways, according to the circumstances of the case. In old cases, where the foot is deformed and assumes the equino-varus variety, the astragalus is well to the front. In such, force the foot into a position of extreme equino-varus, and make an incision immediately in front of the external malleolus, follow the line of the ankle joint for about an inch or more and divide all structures down to the astragalus, generally only severing the peroneus tertius tendon. If the incision needs enlarging, skin only is cut ; further, the other tendons are held aside, and the articulating surface of the astragalus exposed. With a gouge or knife, several grooved portions of the articulating cartilage are removed. If complete bony anchylosis of the ankle be desired it will be necessary to gouge the bone. If a fibrous anchylosis be wished, it will be sufficient to peel off parts of the cartilage. The ankle is kept extended while some pieces of the articulating surfaces of the tibia and fibula are removed. The few vessels are tied, the foot is placed in its normal relation to the leg, and a suture or two close the wound. A

Fig. W.

Fig. X

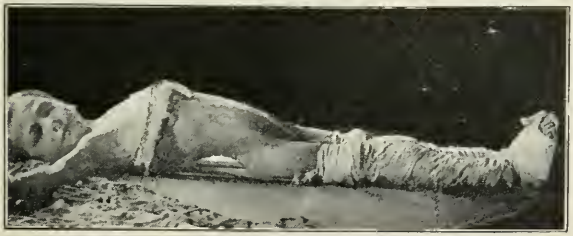


Fig. Y

Fig. Z.

pad of wood wool tissue applied over all and firmly bandaged completes the procedure. In other cases the astragalus is more easily approached from behind, and in such, the foot is firmly flexed on the leg and an incision down to the bone is made along the external border of the tendo achillis. The posterior ligament is now freely divided, and the gouging takes place as in the former operation.

No mishap has occurred in any of our series of twenty-six cases. Each wound has healed by first intention, and, contrary to expectation, those cases where nutritive changes were most marked, healed as readily as those whose nutritive conditions were nearer normal. There is little or no pain attending the healing of the wound. If we have to operate upon both knee and ankle, we apply two splints, one a flexible metal splint so designed as to permit of easy dressing of the ankle wound, and a Thomas's bed splint for the knee. These can be used admirably in combination. During the stage of getting about, the Thomas splint can be altered to admit of walking, and the ankle is in that way saved from every harmful influence.

We have not included in this list a similar operation which we perform in talipes calcaneus, often accompanied by pes cavus. It gives, to our minds, very much more satisfactory results than the shortening of the tendo achillis suggested by Mr. Willett. Some years ago we operated on several tendons in the manner prescribed by Mr. Willett, but we can only recall two cases where the improvement was maintained for any length of time, and in these, prior to operation, there was considerable muscular power in the muscles related to the tendo achillis and in their opponents. The moment we try to pit a paralysed tendo achillis, shortened by operation, against the superincumbent body-weight exercised during locomotion, there can be only one result, and that is, a fresh and speedy yielding of the tendon. We must have some vitality in the gastrocnemius and soleus. If Willett's operation, plus scraping of cartilage be performed, we will obtain considerably better results, for on exhibiting the joint from behind we can remove and shorten the tendo achillis, and erase just sufficient cartilage to limit the action of the ankle to about 10°. The same procedure may with benefit be applied where, in addition to an elongated heel tendon, the tibiales have been completely paralysed, producing a deformity of calcaneo-valgus which cannot be rectified by the hand.

PEMPHIGUS.

Synopsis.—(Vol. 1894, p. 457.) **Liq. Arsenicalis** in young people. Later in life **Quinine**, stimulants and dieting. **Perchloride of Iron** in chronic cases. **Opium** in acute cases. Locally **Zinc Ointment** or **Pick's Zinc Gelatine** with **Carbolic** added. Sponging the skin with weak **Coal Tar Solution**: ℞ Liq. Carbonis, ʒj; Glyc., ʒss; Water, Hj.

PERITONITIS.

A. W. Mayo Robson, F.R.C.S.

Advance in abdominal surgery is in no subject better shown than in the treatment of peritonitis, and this, in the perfecting of methods previously known and adopted rather than in the adoption of any new procedures ; this advance is well shown in a paper by Mr. Lockwood, read before the Royal Medical and Chirurgical Society, October 23rd, 1894, which communication begins with the remark that the term diffuse septic peritonitis probably includes several kinds of disease. In the variety referred to by the author the inflammation is acute, and has no definite limits ; the serous membrane is smeared with lymph, which is either transparent and oil-like or collected in ashen-grey fibrinous flakes ; adhesions are absent, or very slight ; the peritoneal cavity contains thin purulent fluid, which often has a fæcal odour ; or it may be full of gas ; the intestines are distended and paralysed ; and the disease runs a rapid and fatal course.

Although cases which come within this definition are numerous, surgical literature contains few records of recovery after operative intervention.

Hitherto, the author has operated upon cases of diffuse septic peritonitis, more because he was afraid of over-looking a mechanical obstruction than in the hope of curing the peritonitis. A case is described to illustrate the importance of intestinal paralysis and distension in causing the fatal ending. Stress is also laid upon exhaustion and collapse as factors. In the author's successful cases, a systematic attempt was made to meet exhaustion and collapse by stimulating the patient temporarily before the operation with strychnine and brandy ; by the systematic application of warmth during the operation, and by rapid and methodical operating ; and by warmth, stimulants, and nutrient enemata afterwards.

To empty the intestines the gas is drawn from each coil by puncturing it with a fine trochar and cannula ; the fæces are let out by an incision, which is afterwards closed. The abdomen is afterwards irrigated, and closed after the insertion of a drain. Two cases of diffuse septic peritonitis are described in which the treatment was successful. In the first there was a perforation of the ileum. The peritonitis was of not less than forty-eight hours' standing. In the second case the peritonitis had probably been in progress fifty-two hours. The abdomen was full of free gas, with the usual lymph and purulent fluid. The cause was thought to have been a septic inflammation of the left Fallopian tube. She is now convalescent, the operation having been done more than five weeks ago. A third case is described, in which the peritonitis was diffuse, but different in type. In this the

recovery was mainly attributed to an accidental fæcal fistula, which discharged, and prevented distension and paralysis after the laparotomy.

Mr. Howard Marsh[1] records a successful case of acute general peritonitis due to enteritis treated by laparotomy, removal of intestinal contents by means of a cannula, and lavage of the peritoneal cavity. He remarks that in addition to laparotomy and lavage, it is often necessary to open the intestine and as far as possible to remove the material which it contains and which teems with a virulent micro-organism, by which the process of peritoneal inoculation is being constantly repeated.

Herhold[2] relates two cases of diffuse purulent peritonitis in which recovery ensued after incision and drainage.

W. H. Wiggen[3] has employed peroxide of hydrogen in full medicinal strength in cases in which, by accident or disease, pus has gained access to the peritoneal cavity. He believes that this method is entirely without danger.

In the Lettsomian Lectures Mr. Treves[4] points out that in the large proportion of examples of fatal peritonitis the leading symptoms are those of poisoning and not of inflammation ; and that the cases in which suppuration is the most pronounced are among the most favourable examples of peritonitis, while, on the other hand, the most acute and unfavourable cases are those which show the least inflammatory changes.

Localised peritonitis is met with in those regions which are unoccupied by the coils of the lesser bowel. The front which is apparently most sensitive to infection, and which is most prone to rapidly spreading and diffuse inflammation, is that which covers the small intestine.

The lecturer remarked on the comparative invulnerability of the peritoneum in those who are the subjects of chronic peritonitis, or of repeated sub-acute attacks due, in his opinion, to an acquired immunity to septic infection.

He thought the following classification of peritonitis, according to its cause, appeared to be justified by our present knowledge of the subject :—

(1,) Peritonitis due to infection from the intestine (bacterium coli commune).

(2,) Peritonitis due to infection from without (pyogenic cocci, especially streptococcus pyogenes).

(3,) Peritonitis due to the pneumococcus.

(4,) Tubercular peritonitis.

(5,) Peritonitis of doubtful nature : (*a*,) peritonitis due to irritants ; (*b*,) forms reputed to depend upon rheumatism, gonorrhœa, syphilis, Bright's disease, and alcoholism ; (*c*,) peritonitis in the newly-born.

In discussing peritonitis due to infection from the intestine, the lecturer draws attention to the fact that the bacterium coli commune can produce pus after inoculation, and that these various forms of peritonitis which are assumed to be of intestinal origin, depend mainly, and in many instances solely, upon the bacterium coli commune.

The production of peritonitis by non-infective irritants is not yet satisfactorily proved, but injury done by such irritants would appear to favour the action of pathognomonic bacteria.

The existence of rheumatic peritonitis is doubtful, and that associated with gonorrhœa is probably not due to the gonococcus which will not live in the peritoneum, but rather to pyogenic infection of the genital discharges and extension to the peritoneum.

The peritonitis reputed to be due directly to Bright's disease, alcoholism, and to syphilis, would seem rather to occur under conditions favourable to bacterial growth, or to be due to extension from parts which are already inflamed.

Peritonitis in the newly-born is due either to extension from an inflamed cord or to rupture of the bowel from any cause.

By the elaborate experiments of Kader it is now evident that meteorism, as met with in disease, depends almost entirely upon gross disturbances in the circulation of blood through the affected portions of intestine. Vomiting is the most constant symptom of peritonitis, but is usually absent in cases of perforation of the stomach.

In discussing the use of aperients in peritonitis Mr. Treves said : "In the peritonitis following hernia, or associated with acute intestinal obstruction, the complete evacuation of the bowel is desirable for reasons which are apart from the peritonitis. In septic peritonitis—in the usual acceptation of the term—aperients are useless, and the same may be said of their employment in true perforative peritonitis. In a large proportion of examples of perityphlitis, and in the pseudo-ileus which may follow after operation, the prompt evacuation of the bowels is often attended with the very best results."

In a paper on tubercular and suppurative peritonitis Carl Beck[5] remarks, "I have repeatedly been able to affirm that when the axillary and rectal temperature differed for more than two degrees pus in the peritoneal cavity was always present." He advises liberal dusting of the peritoneum with powdered iodoform in tuberculous and septic cases.

Salvador Garciadugo[6] describes a method of detecting small effusions into the peritoneal cavity. By placing the patient on the back on an inclined plane, the fluid collects in Douglas' pouch in females, and the recto-vesical sulcus in males. By digital examination per vaginam in the former and per rectum in the latter, fluctuation is detected. By altering the patient's position from side to side or to complete recumbency the fluid collection can be felt to move coincidently.

Treatment of Tubercular Peritonitis. Treves[7] quoting Aldibert's figures gives the percentage of cures as 69·8, and of complete recoveries as 33·4 in tubercular peritonitis treated by laparotomy. With regard to drainage he says: "Drainage is not necessary, and indeed drainage of the whole cavity is impossible. The gauze drain is better than the rubber tube. Fistulæ have been somewhat common after the use of the tube."

Roswell Park[8] says that among the signs of tubercular peritonitis are *reddening and thickening around the umbilicus* which are due to extension of inflammation along the obliterated umbilical vessels.

Duran[9] recommends the insufflation of sterilised air in these cases, and reports two successful cases. The air had previously been passed through caustic potash moistened with phenic acid. In both examples reported there was considerable reaction, as evidenced by fever, nausea, and tympanites, the latter lasting about eight days.

Nolin[10] records three cases of tuberculous ascites treated by insufflation of sterilised air. Two were apparently completely cured, the other died two months after from tubercular ulceration of the intestine; the ascites had however not returned.

Guignabert[11] describes a method of treatment of tuberculous ascites, originally suggested by Rendu, which consists in partially emptying the peritoneal cavity of ascitic fluid, and then injecting through the cannula which is left *in situ* fine hypodermic syringefuls of camphorated naphthol, subsequently closing the puncture with an aseptic dressing. The immediate result is a more robust inflammation followed by complete resolution.

REFERENCES.—[1]"Lancet," Oct. 27, 1894; [2]"Deut. Med. Woch.," Sept. 27, 1894; [3]"New York Med. Record."; [4]"Brit. Med. Journ.," Feb. and Mar., 1894; [5]"New York Med. Journ.," April 21, 1894; [6]"Med. Record," Jan. 27, 1894; [7]"Annals of Surgery," May, 1894; [8]"Med. Age," Jan. 25, 1894; [9]"Revistas de Ciencias Medicas de Barcelona."; [10]"Berlin. klin. Woch.," No. 34, 1895; [11]"Journ. de Médicine de Paris," p. 155, 1894.

PERTUSSIS.

Synopsis.—(Vol. 1894, p. 458.) Digitalis to counteract heart strain. Locally, volatilized Carbolic Acid; nasal or laryngeal insufflation of Quinine, Boric Acid, Benzoin or Resorcin, and application of the last, especially in spray or by brush to fauces and larynx. Thymus Serpyllum Tincture, ♏ 20 to 30. Rectal injection of Carbon Dioxide. Rest in bed with administration of Sulphurated Antimony, gr. $\frac{1}{3}$ every two hours in catarrhal stage. During convulsive stage inhalation of solution of Carbolate of Soda, Bromide of Potash, or Salicylate of Soda. Relieve coughing by narcotics, anæsthetics, or inhalations of 10 to 20 drops in a handkerchief of: ℞ Sulphuric Ether, 4 parts; Essence of Turpentine, 1 part. Also Quinine internally, and during the day 2 to 6 teaspoonfuls of ℞ Ext, Belladonn., grs. viij$\frac{1}{2}$; Syr. Ipecac., ʒiv; Antimoniated Water, ʒijss; Distilled Water, ʒiv ʒvjss. Sozoiodol-sodium, 3 grs., blown into the nostril each day. For the cough: ℞ Ext. Belladonn., gr. j; Aluminis, ʒss; Syr. Zingib., Syr. Acac., Aq., āā ʒj.

PHARYNGO-MYCOSIS.

Synopsis.—(Vol. 1894, p. 460.) Anhydrous Chromic Acid fused on a probe locally. Iodo-Iodated Zinc Solution, Galvano-cautery, and Chloride of Zinc.

PHARYNX.

Synopsis.—(Vol. 1894, p. 461.) For general thickening, swabbing out with Lugol's Solution: ℞ Iodine Bic., gr. vj; Iodide of Potass., gr. xij; Ol. Menth. Pip., ♏ xij; Glyc., ʒj. Granular pharyngitis, slight forms, may be treated with Trichloracetic Acid in strong solution. For erysipelas Ice, Cocaine, and Sublimate Sprays. For tubercular ulceration Galvano-cautery and Lactic Acid.

PHTHISIS (The Dietetic Treatment of).

Henry P. Loomis, M.D., New York.

In all cases, for the successful treatment of phthisis, attention to diet is of paramount importance; climate and medicine are secondary. It is particularly necessary to emphasise this, as it is a point often overlooked altogether, or is noticed with directions so desultory and imperfectly understood by the patient as to nullify the best results.

It is a well-recognized fact in phthisis that, as the patient's weight increases, the symptoms ameliorate, and the physical signs in the lungs improve. We have not only to provide the patients with food for current needs and to repair daily excess of combustion, but to make up, as far as possible, for previous unrepaired waste. It is known that, by care and strict observance of certain necessary regulations with regard to its quantity, its quality, and its methods of cooking and taking, consumptives can be made to assimilate a quantity of nutritive food far in excess of the needs of the organism. We say, then, increase in weight in phthisical patients, with the attendant good results, is brought about chiefly by forced feeding, in many cases without the aid of medication.

What may this food be? Milk and meat are the two articles of food which in themselves furnish the greatest amount of heat and power producing elements with the least expenditure of digestive energy. That milk and meat may be taken in sufficient quantity, and during a long enough period to produce good results, they must be modified and varied to suit the individual case. Here is where the intelligence and care of the physician are put to the test.

A few general rules on the wise administration of these two important articles of diet in the treatment of phthisis, may be of service.

Milk should never be taken in quantities exceeding 8 ounces at a time, and then should be swallowed slowly during ten or fifteen minutes. When several quarts are drunk in twenty-four hours, lime-water must be added in the proportion of a tablespoonful to 8 ounces. One of the most palatable ways in which milk can be administered is that of being scalded, with seltzer-water added. This mixture is especially refreshing in the early morning.

Some patients cannot take milk, either from a personal idiosyncrasy or enfeebled digestive powers. To such persons kumyss or matzoon can be given with great benefit.

Where the digestive powers are especially weak, peptonized milk can often be assimilated in large quantities, but the objection to its prolonged use is, that after a time its taste palls upon appetite. Two to four quarts of milk should be taken in twenty-four hours. The manner of serving it is not unimportant. To some it is more palatable cold, to others hot. In the majority of cases it should be taken slightly warmed (100° F.).

Meat can be given cooked rare, or better still, when large quantities are to be taken, in the form of squeezed beef-juice. To obtain from the meat the maximum amount of juice, a meat-squeezer is absolutely essential. There are a number of good ones in the market, which range in price from four to twelve shillings. The best kind of meat from which to squeeze the juice is a thick round steak free from fat. This should be seasoned with pepper and salt, broiled over a brisk fire, then cut in pieces two inches square, and then put into the meat-squeezer. About eight ounces of juice can be obtained from each pound of meat. No heat should be applied to the juice, as the albumin would be at once coagulated and the juice rendered worse than useless. If the juice becomes cold and it is advisable to heat it, this can be best accomplished by placing the cup in hot water. It is necessary to go fully into the preparation of the beef-juice, because of its importance as one of the most essential items in the diet of phthisis.

Freshly squeezed beef-juice is the best of the artificial preparations of meat known, and the trouble of preparing it is well repaid by the marked improvement in the patient. Beef-tea should never be given in phthisis as an article of diet. The popular idea that it is nourishing is erroneous. Another nutritive and palatable method of preparing meat is in the form of scraped meat balls. The pulp is scraped from a round steak, either by a fork or by a meat-scraper. This leaves the fibrous material behind. The scraped meat is rolled into small balls and broiled over a quick fire, and served hot with pepper and salt, or Worcestershire sauce.

Scraped meat may also be given raw, spread between thin layers of bread. To some this is a very appetising method. Many of the meat powders on the market, prepared specially for forced feeding, furnish us valuable aid: a preparation from which I have seen marked benefit is the beef peptonoids. Also an excellent meat powder can be prepared in the kitchen, by cutting boiled beef into fine pieces, drying by means of a water bath, and grinding in a coffee-mill with the teeth set closely. The methods of administering these meat powders can be varied almost indefinitely. The powders can be added to soups, broths, milk-punch, milk, and may be taken in cold or warm water. The object in preparing the meat in the various ways suggested is to give the largest amount of albuminoids in the smallest compass, in the most palatable form, and in a way that will not disturb the stomach. I have known cases of phthisis to live for months on nothing but milk and meat prepared as above, and gain steadily in flesh and strength.

It can scarcely be questioned that in consumption alcohol is beneficial. Some attribute to it distinct curative power, and would recommend it in all stages. In my opinion it is one of those remedies which is capable of doing good if judiciously used, while at the same time it is quite as liable to do positive harm. It should never be used in the first stage; in the second stage only in small quantities with food, and preferably in the form of milk-punch in the forenoon and on retiring. The third stage is that in which it appears to do the most good, when taken in small quantities and repeated at regular intervals. In many cases, in all three stages, a glass of ale or porter twice a day with the meals improves the appetite, aids the assimilation of food, and causes marked increase in weight. For prudential reasons, it is often advisable to disguise the alcohol when given for any length of time.

All consumptives pass through three distinct stages in regard to their digestive powers: (1,) The period during which digestion and

appetite are unaffected ; (2.) The period from the time when gastric disturbance first begins until the stomach refuses solid food. During this time septic infection is more or less constant, the fever intermittent, and loss of flesh generally progressive ; (3.) The period from the time when solid food can no longer be taken without digestive disturbances until the death of the patient.

These digestive stages do not necessarily correspond to the recognized physical stages of the disease, but as the diet of these stages varies it is practical to divide the disease in this way.

First Stage.—As soon as the disease is diagnosed systematic dieting is commenced. This is often overlooked, although of such paramount importance. The digestive powers are normal, why limit the diet? some might ask. The object in the early stage of phthisis is, as quickly as possible, to carry the amount of nutriment, and with it the resisting powers of the patient, up to the highest point. This cannot be done by means of the ordinary three meals a day—forced feeding is absolutely essential. Well-defined rules as to diet should be laid down and rigidly adhered to.

Albuminoids and carbo-hydrates should form the basis of the three principal meals. Meat should be eaten rare and with all meals. If the patient is over thirty years old, a large amount of meat is essential and can be more easily taken. Two pounds of beef, at least, should be eaten in the twenty-four hours, or its equivalent in beef-juice. If poultry is served, the dark meat is preferable to the white. Sweetbreads are often tempting, and may assist digestion. Soft-boiled eggs for breakfast are advisable. A raw egg sucked from the shell will often relieve an irritable condition of the pharynx. Butter should be freely used. Cream on cereals, or diluted with seltzer-water, is of benefit in certain cases.

Milk should constitute the principal drink, and should be ordered between each meal, also a glass or more with the meals. In this way from two to three quarts can be taken in the twenty-four hours. To avoid monotony the articles of diet, such as vegetables, etc., ordinarily taken with meals, should not be restricted : except that all indigestible articles, as rich pastries and sweets, should be avoided. The starchy and farinaceous foods should be taken sparingly. While the diet is largely nitrogenous, a sufficient proportion of carbo-hydrates must enter into it. Fats and oils, especially from the animal kingdom, will furnish this. Butter should be freely used.

Cod-liver oil, which is really not a medicine, but a food, should be taken in ℥ss doses after each meal. Whether directly after the meal, or after a half-hour interval, must be decided according to the personal

idiosyncrasies of the patient. When it is impossible to give the pure oil on account of its taste, or because it causes indigestion or eructation, it is wise to give an emulsion of **Cod-liver Oil, Pepsin,** and **Quinine,** which can be readily taken by almost anyone. Often the pure oil can be taken when floated on whiskey. During its first stage the **Phosphates** are valuable, and it is advisable to give food which, owing to the presence of phosphates, is desirable. However, it must be remembered that to supply the phosphates in sufficient quantities, special preparations must be made use of. The **Hypophosphites** should be given after meals diluted in water. In certain cases they are even more valuable than cod-liver oil.

Second Stage.—This is the period which will most try the physician's patience, and is the one in which systematic diet is absolutely essential. The relief from coughing, fever, and digestive disturbances experienced by this class of patients in following the dietetic regimen prescribed, is of great help to the physician, as a guarantee that his directions will be implicitly followed.

In this stage the diet varies rather in the methods of preparing the food than in the food itself. The patient is still fed six times a day, but the meals are restricted. All foods should be offered in the most palatable form, and generally given finely subdivided. This is the stage when beef-juice and scraped beef are specially indicated. A small glass of the former in the middle of the forenoon and afternoon, with a cracker and a scraped meat-ball or raw-meat sandwich for lunch or dinner, will materially aid nutrition. In many cases, a glass of porter or ale with lunch or dinner, will be of a great benefit in increasing appetite and adding flesh.

Milk, plain with lime-water, or boiled, should be given early in the morning, at bed-time, and between meals; but I have learned by experience that this should never be taken at the same time with beef-juice. When milk disagrees with patients kumyss should be substituted, to the amount of three or four bottles a day. With the exception of the malt liquors with meals, stimulants during this stage are apt to do more harm than good. Cough mixtures should never be taken, if they can possibly be avoided. The syrups and narcotics which they contain are almost certain to produce digestive disturbances, in spite of the most rigid dieting. Cod-liver oil will be required, but the greatest care must be used in its administration. The emulsion spoken of in the first stage will often be assimilated without any trouble. Especially in patients in middle life, the pure oil with whiskey will give the best results. Other cases can take cod-liver oil in capsules. Still others can only take the oil in the mixture known

as **Hydroleine.** I feel so sure of the great benefit derived from cod-liver oil in this stage, that all known methods of administering it should be tried before it is abandoned. The duty of the physician who regulates the diet of phthisis does not end there. He must watch the condition of the stomach and intestines, that they may welcome and absorb the nutritive food furnished so often. Especially in this stage, he must make use of digestive ferments to aid assimilation, such as **Pepsin** before and **Hydrochloric Acid** or **Pancreatine** after meals. In this way the patient may be enabled to digest an amount of food liable, under ordinary circumstances, to cause dyspepsia. In cases of a catarrhal condition of the intestines, the systematic drinking of a half to a pint of hot water before meals will prove beneficial. It is especially important that the condition of the bowels be watched, and if possible a daily evacuation obtained.

Third Stage.—As persons who have reached this stage are generally hopeless cases, all that we can expect by diet is to prolong life under the most comfortable circumstances ; much of the distressing coughing and vomiting from which these patients suffer can be controlled by attention to the quantity and kind of food. It is well to give up the idea of three hearty meals a day, and for a time, at least, feed the patient every two hours in small quantities. This is the time when the artificially digested preparations, such as the beef peptonoids, do so much good. Milk with lime-water can be alternated with them with advantage ; often it is necessary to peptonize the milk, and sometimes it has to be given up entirely. Stimulants often repeated, say once in four hours, and in small quantities, generally help this class of cases a great deal. Stimulation and feeding should be kept up regularly during the night, when the patient is awake. Equal parts of **Porter** and **Lime-water** are generally well taken and often of great benefit. It is a well-known clinical experience, that patients in the last stages of phthisis have times of perfect freedom from any digestive disturbances ; they can apparently digest almost anything without trouble. When these times come it is advisable not to restrict their diet, but to allow them anything they crave, remembering that on the least indication of dyspeptic trouble the restricted diet must be resumed. Fresh fruit in this class of cases ordinarily does no harm and is very refreshing. In those cases where the taking of food into the stomach is almost sure to excite paroxysms of coughing which induce retching and vomiting, it is advisable to stop all food and commence artificial feeding through the soft stomach tube. I cannot agree with some, that feeding through a stomach-tube is applicable to most cases. The natural repugnance which persons have to its use must limit

its application to exceptional cases. to those whose physical or psychical disability prevents superalimentation by less distressing methods. Where it can be used the person can be made to digest and assimilate more food than he would be willing to, or could swallow ; the patient is, as it were, stuffed to his utmost capacity. Credit should be given to Debove, who introduced this method and demonstrated what is meant by sufficiency of alimentation, namely, the extreme limit of assimilability.

Some of the most important rules which should govern the dietetic treatment of phthisis may be formulated as follows : (1,) Never take cough mixtures if they can possibly be avoided ; (2,) Food should be taken at least six times in the twenty-four hours ; light luncheons between the meals and on retiring ; (3,) Never eat when suffering from bodily or mental fatigue or nervous excitement ; (4,) Take a nap, or at least, lie down for twenty minutes. before the mid day and evening meals ; (5,) Take only a small amount of fluid with the meals ; (6,) The starches and sugars should be avoided, as also all indigestible articles of diet ; (7,) As far as possible, each meal should consist of articles requiring about the same time to digest ; (8,) Only eat as much as can be easily and fully digested in the time allowed ; (9,) As long as possible, systematic exercise should be taken to favour assimilation and excretion ; when this is impossible, massage or passive exercise should be undergone ; (10,) The food must be nicely prepared and daintily served—made inviting in every way. The following may serve as a sample of a diet sheet in the early stages of phthisis :—

On Awakening.—Eight ounces of equal parts of hot milk and seltzer, taken slowly through half-an-hour.

Breakfast.—Oatmeal or cracked wheat, with a little sugar and an abundance of cream, rare steak, or loin chops with fat ; soft-boiled or poached egg, cream toast. half-pint of milk, small cup of coffee.

Lunch, 10 a.m.—Half-pint of milk, or small tea-cup of squeezed beef-juice with stale bread. 12, noon : Rest or sleep.

Mid-day Meal, 12.30.—Fish, broiled or stewed chicken, scraped meat-ball, stale bread and plenty of butter, baked apples and cream, two glasses of milk.

Lunch, 4 p.m.—Bottle of kumyss, raw scraped beef sandwich, or goblet of milk. 5.30 p.m. : Rest or sleep.

Dinner, 6 p.m.—Substantial meat or fish soup, rare roast beef or mutton, game, slice of stale bread, spinach, cauliflower, fresh vegetables in season (sparingly).

REFERENCE.—Synopsis of article in the "New York Medical Record," March 24, 1894.

Præphthisis. *William H. Pearse, M.D., Ed.*

Having recorded, during many years, the structural and functional peculiarities of phthisical patients, and having noted also the history which they gave of the time and order of the evolution of their symptoms, I have been compelled to regard the final lung disease as a minor part of the true FORM or nature of phthisis, and to group a great number of cases as præphthisis. Their study carries us to early, and often slight, deviations of function, which are the first symptoms of the future phthisis ; or to slight deviations of structure, in a great many, who will pass into phthisis. Phthisis will thus be presented to us, not so much as a disease of the lungs, but as the last stage of an orderly series of deviations, and in its profounder nature, correlative with the different layers and differentiations of the blastoderm.

Structural Bone System.—In some young men and women, of from sixteen to twenty, in phthisis, the thorax has not grown commensurately with the body in general ; in others, from twelve to sixteen, the whole body has almost ceased to grow. Disturbance of the fundamental order or energy of evolution is seen, in clavicles unduly small, or, more often, unduly large ; the hands, especially, show deviation in those who tend to eventual phthisis. Of ninety-one cases with disproportionately large hands, fifty-three were in actual phthisis, thirty-eight were in præphthisis ; of forty-three males in phthisis, the right lung was affected in twenty-six cases, the left lung in seventeen cases ; of ten females in phthisis, the right lung was affected in two cases, the left in eight. As far as the figures go, they indicate that the potential energy of lung segments and nerve differentiations fails, or is expended, in those with unduly large hands, more in the right lung in males, and in the left lung in females.

Nose.—My records show a remarkable correlation between the nose, in its undue deviation from the central line, and in enlargement of the terminal cartilages, and phthisis. Nose unduly to left, twenty-six females in phthisis, fifty-nine females in præphthisis ; fifteen males in phthisis, seven males in præphthisis. Nose unduly to right—forty-six females in phthisis, one hundred and nineteen females in præphthisis ; twenty-nine males in phthisis, eight males in præphthisis. Other deviations from the normal evolution of the nose were, unduly large and laterally pointed terminal cartilages ; terminal cartilages large and unsymmetrical on the two sides ; narrow and sluggish *alæ nasi*, etc. Sometimes the whole superior maxillary and nasal regions are, as it were, twisted over on one side. Such deflection of the bone system must have its foundations in the unbalanced distribution of energy of the nervous system, and of the blastoderm and its layers.

Skin System.—Deviations of the skin system which correlate with the eventual phthisis, are in the skin itself, the nails, hair, teeth, etc. The following tables represent about one thousand five hundred cases :—

HAIR AND PHTHISIS.

	Much on Scalp.	Whisker Scant & Tufty.	Fine Hair.	Spiral on Thorax.	Whisker on Women.	Ill-defined on Brow.	Eyebrows Heavy.	Eyebrows Fine.
Male	9	4	—	5	—	—	66	1
Female	14	—	—	—	3	4	26	—

HAIR AND PRÆPHTHISIS.

Male	6	2	1	—	—	—	20	3
Female	18	—	—	—	1	3	64	2

NAILS AND PHTHISIS.

	Ridged.	Cupped or Squat.	Large.	Rounded.	Thin and Brittle.	Oval or Almond Shaped.
Male	—	4	13	16	—	9
Female	4	16	7	14	3	22

NAILS AND PRÆPHTHISIS.

Male	—	4	8	5	—	11
Female	22	42	9	20	8	28

The heavy eyebrows, tending to meet in the mesial line, occur often in those who will eventually pass into phthisis. Transversely ridged nails will, in one generation, be atavic to phthisis in another generation. Structural and functional deviations occur in the same individual ; we see thus that the future differentiations of the (so-far) primary blastoderm are not absolutely demarked, or, are not "fixed quantities."

Functional.—For years even, before any disease exists in the lungs, the young person may suffer an extreme sense of weakness, especially morning weakness ; scant menses ; anorexia—"all desire for food is gone" ; gastrodynia in varying degrees ; a "lifeless" expression of countenance ; cold feet at night, etc. We may fairly express the *ensemble* of disturbed and deficient function as a want of "energy" in protoplasm.

We may fairly seek to group the structural and functional deviations

of præphthisis in correlation with the epiblast, mesoblast, and hypoblast of Von Baer; but the play and variation of disturbed function and structure cannot be rigidly reduced to Von Baer's layers. We have to seek the full FORM or nature of phthisis, yet deeper in the biological evolution than even in the blastoderm and its layers.

Atavism.—Phthisis in one or more members of a family may be *atavic* to deviations, such as have been enumerated, of the bone, skin, or functions, in a previous generation, or in brothers or sisters. I cannot doubt that actual phthisis, having skipped several generations, yet these intermediate generations have shown the deep FORM of phthisis by atavic deviations of the bone, skin, and functional systems only.

Heredity and Modifying Influences.—Heredity expresses the result of the harmonic "survivals" of the main energies which are concerned in the evolution of cells and living beings; heredity has its roots or conditions as widespread and deep, as is the biological evolution itself; the forces which make for heredity are thus greater than those involved in modifying influences, but both are of the same kind. It is established that certain conditions will cause the loss of energy in lung protoplasm, and thus the evolution of phthisis; and it is as clearly established, that certain other conditions of climate, mode of life, etc., will tend to maintain that "energy," and to be defensive against the molecular attractions of bacillary protoplasm.

We are carried into presence of the infinitely delicate changes and conditions on which both health and disease depend.

TREATMENT.—We apply treatment by outer and inner environment, *i.e.*, climatic or cosmic influences or energies, and by foods, the gentlest but constant tonic regimen, nurturing each plant according to its powers, giving energy to its protoplasm, by natural means, *i.e.*, by the application of those energies on which life depends, and in, and of which, life has evolved; change of air, implying change in the totality of environment, however small in degree, has a vast prophylactic power.

Foods.—The most marked desires of the præphthisical are for onions, and for sour, salted, and smoked foods; butter is liked, but rarely any other fat; next to butter, the fat of pork is preferred. The desire for special foods expresses wants of every molecule; onions (benzene molecule) may hypothetically be held to give energy to protoplasm; so also may smoked foods. Salted foods and "sours" may aid to keep the *primæ viæ* pure, and thus hinder the slow poisoning of the system by intestinal contents.

REFERENCE.—"Provincial Medical Journal," Jan., 1894.

Synopsis.—(Vol. 1894, pp. 24, 30, and 462.) **Oleum Succini** as application to chest. **Phenic Acid** injection with **Eucalyptol.** ℞ Eucalyptol, 10 parts; Phenic Acid, 10 parts; Vegetable Oil, 100 parts; or: ℞ Eucalyptol, 15 parts; Phenic Acid, 15 parts; Vegetable Oil, 100 parts; or: ℞ Eucalyptol, 20 parts; Phenic Acid, 20 parts; Vegetable Oil, 100 parts. **Guaiacol,** 30 ♏ daily, diluted with **Almond Oil** and injected hypodermically, or a dose of 20 ♏ in **Cod-liver Oil**; ʒss may be taken three times a day for several months. Hudeod gives **Creasote** per rectum if necessary: ℞ Creasote, 3 grms.; Cognac, 10 grms.; Distilled Water, 200 grms.; this is used once or twice daily after an evacuating enema if the latter is required. To prevent self-infection of intestinal tract **Bismuth** and **Charcoal** are best for gastric portion; **Salol, Sodic Salicylate** or **Benzoate Camphor,** or **Ammonium Benzoate** for the small intestine, and for the large bowel **β-Naphthol** or **Charcoal. Saccharine** is said to be the best disinfectant for the mouth. **Iodoform, Naphthalin, α-**and **β-Naphthols** and **Hydronaphthol** have been proposed by Bouchard. **Carbolic Acid** in keratin-coated pills is growing in favour as an intestinal antiseptic; **Cresol, Thymol, Chlorophenol, Pyrocatechin, Pyrogallol, Eugenol, Tribromophenol** may be of some service. **Salol** and **Benzosol** (guaiacol benzoate) have also been used. The **Carbonates of Guaiacol, Creasote, Eugenol, Chlorophenol** and **Pyrocatechin** are becoming popular, and the first named may be given in daily doses of 75 grains or more. Antiseptic inhalations are unsatisfactory. **Inunctions of Iodoform** and others may assist in the treatment of articular tuberculosis. Intra-pulmonary injections are hardly justifiable. The use of pocket and other spittoons is insisted upon, and their proper disinfection is essential.

PIGMENTATION OF THE SKIN.

Synopsis.—(Vol. 1894, p. 474.) To bring about peeling of the skin the following is applied several times a day: ℞ Resorcin, ʒjss; Oxide of Zinc, ʒijss; Pure Anhydrous Silica, gr. xxx; Lard, ʒvj; Olive Oil, ʒij. In three or four days apply: ℞ White Gelatine, ʒj; Oxide of Zinc, gr. 45; Pure Glycerine at 30°, ♏ 75; Distilled Water, ʒij. Warm before application and protect by cotton wool afterwards. To remove freckles: ℞ Corrosive Sublimate, gr. vij; Distilled Water, ʒvj; Sp. Camphor, ʒss; Rose Water, ʒv. Apply on compresses and follow up the peeling by simple ointment. Ointments containing **Sulphur,** 30 to 50%, or **Caustic Soda,** 3 to 5%, may be used, or: ℞ Hydrarg. Ammoniat., Bismuth Subnitr., āā partes, ijss; Olei Oliveæ, partem j; Ung. Glyc., partes 4; or: ℞ Naphthol β, partes v—x; Zinci Ox. Pulv. Amyli, āā partes xijss; Vaseline ad parties l. For **pigmentation of pregnancy**: ℞ Zinci Ox., gr. iv; Hydrarg. Ox. flav., **gr. xvj;** Ol. Ricini, Ol. Theobrom., āā ʒiijss; Otto Rosæ, gtt. x. **Tattooing.**

PLEURISY.

Dr. Aufrecht[1] thinks the good results obtained in recent years in the treatment of pleurisy depend in a great part upon the use of **Salicylic Acid.** But salicylic acid, not salicylate of sodium, must be used. The salicylate is weaker and produces marked secondary effects. When the pure acid is given in wafers, patients must always be admonished to follow the dose with a copious draught of water, in order to prevent a disagreeable burning feeling in the stomach.

Aufrecht has adopted the following modification of his former method of giving the salicylic acid: If in the first eight days no diminution of the exudate occurs, do not conclude that the salicylic acid has proved useless, but stop it for a day or two, and then begin again the dose of 6 grammes (90 grains) a day, in divided doses of 1 gramme, and so continue the treatment for several days, with interruptions of a day or two.

As soon as the salicylic acid treatment proves ineffective, the fluid should be withdrawn by aspiration. Fever is not a contra-indication to the operation; on the contrary, the earlier the operation is performed the sooner will the remainder of the exudate be absorbed. The patient should lie upon his back, and Aufrecht selects for the point of puncture the fourth or fifth intercostal space between the anterior and posterior axillary lines. After the operation, patients without exception, according to their age, receive from $\frac{1}{6}$ to $\frac{1}{4}$ grain of **Morphine** to allay the cough which ensues from expansion of the lungs. Subsequently a drachm of salicylic acid, on the average, is given daily for several days.

A local application for pleurisy[2]:—

℞ Guaiacol pure ℥j | Tincture of Iodine ℥vij

Paint the whole of this liquid each evening on the affected side. The temperature quickly falls, an abundant perspiration takes place, and the effusion becomes soon absorbed.

REFERENCE.—[1] "Therap. Monats.," Sept. 1893; [2] "Med. Press," Nov. 11, 1893.

Synopsis.—(Vol. 1894, p. 475.) Phenol Vesication in children, instead of cantharides blister to remove exudation. Salicylic Acid and its salts.

PNEUMONIA.

The combination of pure **Ethyl Alcohol** with **Digitalis** constitutes, in the estimation of Huchard, the ideal treatment of pneumonia when any active treatment is needed. He gives the digitalis in the form of its active principle—the crystallized digitalin—in the daily dose of 1 milligramme by mouth.

Reiner concludes that the digitalis neither hinders the advance of the disease nor shortens its course, but rather protracts it. There is no favourable influence upon the temperature. The pulse is not diminished in frequency. The effect on the respiration is not regular enough to draw any conclusions from.

Reiner thinks that, instead of preventing collapse, it causes a slowly advancing one which lasts a long time.

Washburn takes the view that pneumonia can only be treated scientifically by striking at the materies morbi, destroying the pneu-

mococcus, or antidoting the pneumo-toxine in the blood, and, as we are as yet unable to do this, treatment must be palliative only.

Alcohol has always enjoyed the reputation of being a stimulant, but the writer disbelieves this, and is firmly convinced that this view of the question ultimately will prevail. Symptoms of this are becoming more and more numerous every year. The most commonly observed effects of alcohol are all sedative.

Cunningham employs hypodermoklysis, or the subcutaneous injection of a saline solution, **Chloride of Sodium**, 1 drachm to the pint of water, with the object of producing reaction from the prostration and marked debility which are present in many cases, and he believes that its employment was followed by advantageous results, particularly in those cases which were suffering from apparent cardiac failure, which, he thinks, may be due to ante-mortem heart-clot. He believes that the addition of chlorides to the blood, which are under these circumstances passed out of the body too freely, does much towards preventing the formation of clots in the cardiac cavity, and he employs daily from 4 to 12 ounces in this way. Of course it is necessary that the salt solutions should be boiled and the operation performed in an absolutely aseptic manner.

We ought to abandon the use of alcohol in the condition in question, and extend our observations in other directions in order to ascertain whether we are in possession of a therapeutic agent from whose physiologic action we have any reason to expect aid in the accomplishment of the objects to be attained, namely, the increase of nervous sensibility and the elimination of the specific poison of the disease and the products of retrograde metamorphosis. We have such an agent in **Strychnine.**

By its administration the sensibility of the nervous system is heightened in every part—not only the cerebro-spinal system, but also the sympathetic. It acts as a stimulant on the respiratory nerve-centre, upon the cardiac ganglia, and increases the sensibility of the nerves of special sense, touch, sight, hearing, and also increases the activity of the olfactory sense. It increases the mechanical movements of the stomach as well as the amount and acidity of the gastric juice, thus assisting the process of digestion, and at the same time there is an increased action of the kidneys, witnessed by an increase in the quantity of urine eliminated.

We have then, according to Cunningham, in strychnine a drug which in its action is diametrically opposed to alcohol, and one which is above all others, by reason of its physiologic action, indicated in the treatment of pneumonia.

As to **Venesection,** it may be admitted that good may sometimes result in certain cases. The advocate of blood-letting has this in his favour, that with the blood withdrawn there escapes a certain amount of toxalbumin ; and the amelioration which it is claimed often follows the operation is probably due to this fact rather than to any relief which the right heart may receive by reason of a temporarily reduced total quantity of blood in the vessels, the *modus operandi* of venesection in this case being the same as in uræmic intoxication, where marked temporary relief often follows the operation, by reason of the coincident removal of uræmic poisons with the blood. On this supposition the fact would be explained that venesection is indicated, as its advocates claim, in all stages of the disease.

REFERENCES.—"Therap. Gaz.," Dec. 15, 1893; Ibid., March 15, 1894.

Synopsis.—(Vol. 1894, p. 477.) Baruch considers cold water treatment dangerous in children. Sallard uses 8 to 10 **Wet Cuppings** at painful spot ; later a few **Dry Cuppings** ; 60 to 80 grms. **Rum** or **Cognac,** diluted; 2 to 5 centigrms. **Thebaic Extract** in pill for insomnia. In alcoholic pneumonia full doses of **Alcohol** and 5 to 20 centigrammes **Thebaic Extract. Emetics** and **Cathartics** if bilious symptoms predominate. **Sulphate of Quinine** in malaria. For children **Chloral** at night to quiet, or **Warm Baths** for quarter of an hour. ℞ Dry Ext. Quinquina, 4 grms. ; Tinc. Balm-mint, 30 grms. ; Tinc. Cinnamon, 8 grs. ; Malaga Wine, 90 grms. ; Syrup Bitter Orange-peel, 30 grms. ; M. To be given in dessertspoonful doses in twenty-four hours as a cordial potion. Hypodermically : **Sodium Benzoate,** 3 grms. ; **Caffeine,** 2 grms. ; **Boiling Water,** 10 grms. ; M. 1 or 2 syringefuls a day. For children : ℞ Potassium Bromide, 2 grms. ; Syrup of Chloral, 60 grms. ; Water, 60 grms. ; M. A dessertspoonful in a cup of milk to which the yolk of an egg has been added. In children **Quinine** is useful ; **Digitalis,** 1 to 4 grs., repeated once or twice and combined with **Nitro-glycerine,** $\frac{1}{500}$ to $\frac{1}{100}$ gr. ; **Sodium Nitrate,** $\frac{1}{10}$ to $\frac{1}{4}$ gr. ; or **Aconite Tincture,** 1 ♏ every one or two hours if pulse is weak. **Strychnine,** $\frac{1}{30}$ gr. in twenty-four hours for a child one year old. **Ammon. Carb.,** $\frac{1}{2}$ gr. to 1 gr. every two hours. **Turpentine Inhalations** ; **Chloride of Ammonium,** gr. 10 to 20 volatilised, and **Camphor,** gr. $\frac{1}{4}$ to 1. **Sinapisms** for pleural pain. **Opium** to relieve cough. In interstitial form **Potassium Iodide** and **Digitalis** internally. **Iodine** externally in late stages. **Pulmonary Gymnastics.** Hypodermic injection of **Borax.** Local application of **Chloroform** on cotton wool. **Atropine** and **Morphia** injected, or **Leeches.** Internally **Corrosive Sublimate,** 5 to 8 milligramme doses in 3 ounces of water with a little alcohol. **Tartar Emetic. Quinine** and **Serpentary** are the best tonics. **Alcohol** and **Ether,** or ethereal solution of **Musk** for rapid prostration. **Calcium Chloride,** gr. 5 to 15, every four hours in acute lobar form. Petresco treats all acute uncomplicated cases with **Digitalis** from beginning. For broncho-pneumonia Sevestre employs **Calomel,** 1 gr. doses, for infants under six months. For dyspnœa two or three injections of **Ether** or **Caffeine** daily ; **Dry** or **Wet Cupping** or **Sinapisms** to relieve lung ; in algid condition **Dry Friction** or **Alcoholic Rubbing.**

PRÆPHTHISIS. (See page 423.")

PREGNANCY.

Synopsis.—(Vol. 1894, p. 480.) Strychnine as preparatory tonic, gr. $\frac{1}{60}$ t. d. and increased. For vomiting, intestinal injections of 2 litres of Saline Solution, 2·5%. Routh arrests vomiting by bathing cervix with equal parts Iodine, Iodide of Potash, Alcohol and Water. To remove skin spots of pregnancy: R Pure Oxide of Zinc, gr. iv; Yellow Oxide of Mercury, gr. xvj; Castor Oil, Cocoa-butter, āā ℥iijss; Essence of Roses, gtt. x. M. Ft. ung. and apply with friction twice daily.

PROSTATE (Diseases of the). *E. Hurry Fenwick, F.R.C.S.*

Hypertrophy of Prostate.—F. A. Davy,[1] of Sheffield, suggests the use of rectal suppositories of **Iodide of Potassium** (gr. 10) every night, believing that diminution of the size of an enlarged prostate resulted in one case from the employment of this drug.

Jessop's Prostate Scissors.—The scissors consists of a ring at the end of each blade; the smaller ring is made with a cutting edge and fits exactly into the circle of the larger one, the edge of which is also sharp. The scissors are passed through a suprapubic incision and the projecting lobe of the prostrate is snipped away, either at once or piecemeal. They have also proved of service in the removal of vesical growth. They can be obtained from R. Rauschke, 35, Bond street, Leeds.

Suprapubic Prostatectomy.—Mayo Robson[2] records twelve cases with two deaths. He submits that whenever a patient has no large amount of residual urine and can be made comfortable by the passage of a catheter at night, or night and morning, and where catheterism is well borne and not difficult or distressing, operative treatment is unnecessary. In the presence of complete atony of the muscular coat of the bladder, operation is advisable if the atony be only of short duration, say a few weeks; but if the conditions have existed for many months the removal of the obstruction to the urinary out-flow, even if successfully accomplished, can probably lead to a very slight ultimate benefit. The presence of a large amount of residual urine associated with fair vesical contractility and not diminishing after regular catheterism, the patient being otherwise in fair health, is a decided indication for prostatectomy, unless the relief given by the catheter is considered adequate by the patient.

Cystitis, associated with enlarged prostate, especially if catheterism is difficult and painful, is an indication rather than otherwise for suprapubic prostatectomy, as at the same time the bladder can be thoroughly purified and drained. The presence of a calculus or of calculous material associated with prostatic enlargement and residual urine, is an indication for suprapubic lithotomy followed by prostatec-

tomy, as at the same time it enables the bladder to be thoroughly cleared, the co-existing cystitis to be treated by drainage, and the obstruction at the neck of the bladder to be removed.

Mr. Mayo Robson formulates the contra-indications to the operation as follows: The presence of advanced kidney disease, especially if associated with greatly diminished excretion of urea; chronic atony of the bladder; glycosuria; well marked degeneration of the blood vessels, associated with general senile debility or other organic disease which would render any major operation inadvisable, would lead the surgeon to seek to give relief by catheterism or simple perineal drainage rather than by a more serious operation.

Castration for the Relief of Prostatic Obstructive Hypertrophy.—Since White[3] suggested the operation of castration for the possible relief of obstruction due to an enlarged senile prostate, cases have been recorded in the literature and the result of the method given. They are all favourable. Many patients, there is no doubt, have been offered the chance of relief of urinary symptoms on the proviso of the removal of the sexual powers. Many have refused. Probably the male is more conservative than the female. Judging from the answers the collator has received from patients to whom the procedure has been suggested, the operation will not be received with much favour by the sufferer. There is obviously, however, a certain advance in the step recommended. Some modification of the technique may be necessary, and more knowledge of what form of case is suitable must be acquired.

It will be wiser to recapitulate Dr. White's arguments in favour of castration. "If the analogy between uterine fibro-myomata and prostatic over-growth was a real one, castration might have the same effect upon the latter that oöphorectomy does upon the former, and cause a shrinkage or atrophy which would result in the practical disappearance of the obstruction."

Hunter has shown that the prostate of the perfect bull is soft and bulky, whilst that of the castrated animal is small, flabby, tough and ligamentous. Griffiths examined the generative organs of the pig, bullock, sheep and horse, cat and dog, after castration and found in each that the prostate had been transformed into a mass of fibrous connective tissue.

Gruber had observed, says Griffiths, marked atrophy of the prostate in a man aged sixty-five who had been castrated in early youth. Pelican says that the prostates in eunuchs are about the size of those found in children.

Civiale has noted the fact that in doing a lithotomy on a man who

had undergone complete castration for the cure of double hernia, he found the prostate had practically disappeared.

In the female, oöphorectomy causes a disappearance of uterine fibromyomata and an atrophy of the uterus itself. Castration has the same effect on normal prostates of the dog, and of our own species. Will it affect the pathological prostate in the same way? To this important question the literature contains the following answers:—

F. Ramm,[4] of Christiania, records two cases with brilliant result.

Dr. Francis Haynes,[5] of Los Angeles, California, writes, "Following the suggestion of Professor White, of Philadelphia, I have three times made double castrations in old men afflicted with prostatic hypertrophy: (1,) Operation eighty-four days ago in a case of two years' standing of moderate severity. The patient is practically cured; (2,) Operation forty-seven days ago in a desperate case, requiring catheterisation every two hours, complicated by intense cystitis and by morphinism acquired as a result of frightful suffering. With the most devoted nursing this old man has improved wonderfully. Cystitis has disappeared; one-third of the urine is passed spontaneously; catheter is used about four or five hours; morphinism has been cured; general condition good; (3,) Operation fourteen days ago. Incipient case; catheterisation almost impossible, because of the peculiar development of the prostate."

In a fourth case section of the vas deferens gave no definite results.

Fremont Smith[6] ablated both the testicles of a man aged sixty-nine who had had mild symptoms of prostatic hypertrophy for a year. Seven and a half weeks before admission to hospital he had suffered from irregular fever, had difficult and painful micturition, and the urine was loaded with pus and products of decomposition. Attacks of retention were frequent. The smallest amount of residual urine was six ounces. The depletion of repeated acute cystitic attacks, accompanied at each recurrence by excess of pus and septic fever, the harassing constant desire to urinate, and the necessary loss of sleep reduced his weight from 165 to 135 lbs. He was castrated. During the week following the operation the patient was catheterised twice daily. At the end of that period he voided his urine, and in six weeks he was discharged cured. His general condition was greatly changed. He had no fever; his weight had increased; he had no retention or cystitis; the residual urine had diminished to three drachms; he passed his water only four to six times at night, and fifteen weeks after the operation he is reported "to have no trouble at all and no pain with his urine."

Dr. Arthur Powell,[7] of Bengal, mentions a case of a man at sixty-five

who for months attended as an out-patient for the relief of prostatic retention. He developed a nodule in the right testicle, for which he was castrated. The left testicle was small and probably useless. The prostate diminished markedly in size, and he obtained much relief from his urinary trouble.

Meyer and Haenel[8] give the following case: A. P., aged seventy, suffering from enlargement of the prostate and ammoniacal cystitis, with fever and constitutional disturbance; prostate per rectum was size of a man's fist; lobes were equal and the surface smooth; catheterism very difficult and painful; residual urine 4 to 5 ounces; was castrated on 16th May, 1894. On the 24th May the prostate was found smaller; 31st May one-third smaller, and markedly softer; July 3rd, two thirds smaller, and 25th July almost normal size. A few days after the operation the painful and frequent micturition began to diminish, especially in the night. Catheterism was easier and the irrigation of the bladder rapidly subdued the cystitis, which before had proved unmanageable by this means, so that in three weeks the urine was normal. The atony of the bladder remained unchanged for a fortnight, but after this date improvement commenced and the power of contraction returned. On the 25th July, a little more than two months after the operation, the condition was as follows: Prostate was soft and of nearly normal dimensions; only towards the right side is enlargement still noticeable. The stream of urine is full; the bladder emptying itself every four or five hours; urine is normal. General health is perfect.

Bier's Operation for Hypertrophy of Prostate.—Meyer[9] describes a case in which he ligatured the internal iliac arteries (Bier's method) for hypertrophied prostate in a man aged fifty-five, who had had marked urinary trouble for over four years, and whose urine was purulent. Twelve hours after operation the patient passed urine voluntary for the first time within six months. There was marked atony of the bladder, yet continuous retention never set in again. The prostate became smaller, and the length of the urethra was reduced from 23½ to 21½ centimètres in six months. The operative technique was, however, unfavourable, being productive of recurrent hæmorrhage from the left iliac, necessitating re-ligature and amputation of foot for gangrene.

A perusal of Meyer's case, of its difficulties, dangers, and untoward result, as regards gangrene of the foot, will convince anyone of the necessity for the need of especial surgical skill for this operation in very fat people. Moreover, it must be remembered that in a proportion of prostatics arterio-sclerosis is present.

REFERENCES.—[1] "Brit. Med. Journ.," p. 69, July 14, 1894; [2] Ibid., p. 62, July 14, 1894; [3] "Annals of Surgery," 1893; [4] "Centralblatt. für Chrurgie," No. 17, p. 387, 1894; [5] "Buffalo Med. and Surg. Journ.," March, 1894; [6] "Annals of Surgery," p. 52, July 1894; [7] "Brit. Med. Journ.," p. 1099, Nov. 18, 1893; [8] "Centralblatt. für Harn und Sex. Org," Band v, Heft 7, 1894; [9] "Annals of Surgery," July, 1894.

Synopsis.—(Vol. 1894, p. 486.) **Ichthyol Suppositories**, *e.g.*, 0·75 of ichthyol to 2·0 or 2·5 cacao-butter. In gonorrhœal cases, a 10% solution was injected into the rectum.

PRURIGO. *T. Colcott Fox, M.B.*

Hatschez[1] has tried the effects of **Massage** in Kaposi's wards. He used **Effleurage**, and commenced on the limbs next the trunk, and little by little advanced down the limbs. The frictions were energetic and centripetal. At first each limb was massaged from 10 to 15 minutes, and afterwards the time was reduced. Itching was relieved, but the time required varied. With this the effects of scratching disappeared. The employment of vaseline in the massage was valuable. The prurigo was not cured, but massage decidedly relieves the itching, and this he thinks is due to the resolution of the exudation.

Spiegler recommends a 5 to 10 per cent. ointment of **Sulpho-phenate of Sodium**, with equal parts of vaseline and lanoline as a base.

Iwanow[2] holds that prurigo demands an *increase of fat in the diet.* For small children he gives a tablespoonful of lard in hot milk. To old children he administers cod-liver oil, increasing the quantity until they can take 2 to 4 tablespoonfuls daily. This must be kept up for months, and, if possible, one to two years. To allay itching, he orders after a warm bath the application of carbolic acid 50 per cent., acetic acid 10 per cent., in distilled water or glycerine. The baths are given once or twice a week, and the application rubbed in two to four times daily. When the itching is relieved he uses simple glycerine. To prevent relapses the treatment should be continued for years.

REFERENCES.—[1] "Archiv. f. Derm., v. Syph.," 1893, p. 931; [2] "Wiestrick Hygieny i. Mediciny," vol. xv., No. 1, 1893.

PRURITUS. *T. Colcott Fox, M.B.*

Pruritus is apt to prove such a troublesome symptom that we refer again to Bronson's valuable papers :—

(1,) The patient must exercise will power to refrain from scratching, and adopt other means, as firm pressure or stroking. Scratching however is beyond the control of the will power in the state of half sleep, and moreover it becomes a habit and unconscious.

(2,) Irritating contacts of all sorts should be most scrupulously avoided, *e.g.*, the clothing should be cotton, linen, or silk.

(3,) Avoid immoderate temperatures whether of heat or cold, and especially of sudden changes, which are apt to excite itching.

(4,) Excitants of itching are frequently *intracutaneous* and incidental to the trophic changes characterizing one of so-called pruritic skin diseases. In such case the treatment of the itching is included in that of the disease of which the itching is a symptom. Toxæmiæ may be counteracted by diaphoretics and diuretics; disturbances of nerve terminals, directly transmitted from the interior, are best relieved by substitutive irritants.

(5,) Where such measures fail we may have recourse to sedatives. Internally they are apt to be disappointing. They, and especially the narcotics, are also objectionable, because the degree of general sedation required to affect the skin is so intense, and because the depressing after effect on the nervous system tends to exaggerate the general hyperæsthesia, which is already essentially an atonic condition. Nevertheless, the enervating effects of loss of sleep must be avoided by giving **Sulphonal** or some other hypnotic. **Bromides** in full doses are often indispensable. **Cannabis Indica** is a cutaneous anæsthetic and analgesic, and **Gelsemium** in large doses is useful in some cases (especially chronic urticaria). **Phenacetin** and **Antipyrin** have more effect on pain than itching. Local sedatives are more satisfactory. They tend to depress vital action and are nerve-depressants. **Salicylic Acid, Salol, Menthol, Thymol, Bichloride of Mercury,** and especially **Carbolic Acid,** "the opium of the skin," belong to the antiseptic group. It may be noted that solutions in water are more apt to be corrosive than in oils or fats, and more easily absorbed into the general system. They may be embodied in alcohol or in superfatted soaps. Water solutions of carbolic acid, 2 to 5 per cent., or 12½ to 25 per cent. oily or fatty application to moderate extent of surface, give best effects.

Bronson strongly recommends the following formula: —

℞ Acid. Carbolici	ʒj to ʒij	Ol. Lini	ʒj
Liq. Potass.	ʒj	Ol. Bergamot	q.s.

M. Sig. Shake before using.

Other local sedatives, not in this group, are **Cocaine, Cyanide of Potassium** (ʒj to Oj of water), **Chloroform** ʒss to ʒviij, **Water** with ʒss **Glycerine, Menthol** in various combinations, **Camphor** with an inert powder or combined with **Chloral** and diluted. Some of these are also substitutive irritants. The application for several minutes of **Hot Water**, as hot as can be tolerated, is useful.

A third class of remedies is called for by the special condition called by Bronson hypopselaphesia as distinguished from hyperæsthesia.

In the discussion which followed, Hyde pointed out that pruritus when circumscribed and unilateral may be relieved by applying substitutive stimulants to the corresponding side of the body. Corlett commended a 3 to 5 per cent. aqueous solution of **Resorcin.** Morrow pointed out the excellent results of the **Hot Water-bag** applied to the spine. Hardaway depends greatly on **Quinine** in 15-grain doses at night, or **Vinum Antimoniale** given in divided doses in the day, and on **Pilocarpine,** when the skin is harsh and dry. He uses carbolic acid as a spray. Denslow values **Ergot.**

Pruritus Vulvæ.—Sänger thinks nearly all vulvitis pruriginosa (pruritus vulvæ) exogenetic, though some less severe cases are endogenetic (hæmogenetic). A temporary itching does not constitute the disease. Genuine pruritus vulvæ does not exist apart from changes in the skin (corium and nerve endings), although such changes may be scarcely visible to the naked eye. Neurasthenia and hysteria may co-operate with exogenetic causes. Sänger's classification will be useful in unravelling the causes of such a troublesome malady, and in leading to a correct treatment.

Endogenetic Causes.

(1,) Hæmatogenetic includes substances found in the blood in certain diseases (icterus, chronic nephritis, diabetes mellitus) which cause itching by their action on the nerve endings. Some chemical substances (morphia, alcohol, iodoform, etc.,) act in a similar way when introduced into the blood.

(2,) Circulatory, *e.g.*, passive congestion of the venæ pudendæ, of the hæmorrhoidal veins, or of the pampiniform plexus, caused by diseases of the heart, by pregnancy, by hæmorrhoids, or by retroflexion or tumours of the uterus.

(3,) Hæmatogenetic skin affections, as erythema, urticaria, herpes, and some forms of eczema which affect the papillæ directly or indirectly, by causing rubbing of the parts.

Exogenetic Causes.

(4,) *Secretory and Chemical.*—(*a*,) Excessive activity of the cutaneous glands of the vulva (hyperidrosis, seborrhœa); (*b*,) Continued contact with normal or decomposed urine; (*c*,) Pathological secretions of vulva, vagina, and uterus, gonorrhœal or desquamative vaginitis, cervical endometritis, cancer or tumours of the uterus; (*d*,) Catarrhal and purulent discharges from the rectum. This class of causes produces the most intense form of vulvitis pruriginosa.

(5,) *Parasitic.*—(*a*,) Animal parasites: pediculi, oxyuris vermicularis,

etc. ; (*b*,) Vegetable parasites : leptothrix, leptomitus, probably also oïdium albicans. Micrococcus uræ and bacterium uræ as indirect causes. More specifically gonococcus, smegma bacilli and dirt bacilli ; the various microbes of the skin and vagina : and, as causes of secondary infection of wounds produced by scratching, streptococci and staphylococci.

(6,) *Mechanical.*—(*a*,) Primary : masturbation ; excessive washing and rubbing ; the use of unclean or infected sponges ; (*b*,) Secondary : rubbing, scratching, etc., of the affected parts.

(7,) *Thermal.*—The influence of temperature is illustrated by the increased itching when the patient is in bed, or in a warm bath.

He then considers the operative treatment, and gives a list of cases where operative measures have been tried by others, and two cases of his own, in which he removed the whole of the external genital organs with good result, both as to primary healing and the cure of the disease.

He concludes as follows :—

(1,) The partial or total extirpation of the vulva is quite a legitimate operation which ought to be more frequently employed in chronic vulvitis pruriginosa which resists other treatment.

(2,) There is no objection to the removal of the clitoris, especially in elderly women, since their nerve-endings have lost their specific sensory functions in the course of the disease.

(3,) In younger patients, and in circumscribed cases of the disease, partial operations ought to be undertaken.

(4,) In older patients, and in extensive disease, the whole vulva should be removed, and replaced by a plastic operation.

More Madden also contributes a valuable paper and gives the following indications for treatment : —

(1,) If traceable to, or to any recognizable extent co-existent with, distinctly marked neurotic or hysterical temperament, our primary attention should be given to the abatement of the constitutional neurasthenia by nerve tonics and sedatives, such as the **Hydrobromates of Iron** and **Quinine**, the **Bromides**, and **Hydrobromic Acid** in combination with **Valerian**.

(2,) If symptomatic of uterine cancer, surgical interposition, if practicable, affords the only effectual remedy, and, if not practicable, we must fall back on such palliative treatment as we have at hand.

(3,) If diabetes is present, the natural **Salicylate of Sodium** (Goodell) may be tried in full doses.

(4,) Locally, (*a*,) Secure complete asepsis of the affected parts

by frequent ablutions with hot water (120° F.) and an antiseptic soap, such as coal tar or ichthyol lanoline soap; (*b*,) Immediately swab with an efficient germicide solution, as **Corrosive Sublimate** (1 in 1000); **Boric Acid** (1 in 25); **Izal** (1 in 100); **Carbolic Acid** (1 in 40); (*c*,) Then apply topical sedatives. Madden finds **Methylene Blue** applied locally as a lotion, and exhibited internally in grain doses most serviceable, but as it stains the urine both methods are often exceedingly objectionable. The following are selected as valuable. **Cocaine**, 5 per cent. in peppermint water; A cream composed of equal parts of **Cocaine**, **Chloral**, **Menthol** and **Camphor** in **Paroleine**; saturated solution of **Boric Acid**; **Hydrocyanic Acid** with **Borax** and **Morphine** in **Carbolated Solutions of Camphor**; **Black Wash** and **Yellow Wash.**

Pruritus Ani.—We select the following from the "British Medical Journal": **Argent. Nit.**, grs. x; **Spr. Æth. Nit.**, **Aq. Destill.**, āā ℥ij. To be used as a paint three or four times weekly, or oftener, combined with cold sponging with carbolic water, and a carbolic acid ointment night and morning (Edgar Duke). A 1 in 1000 solution of **Biniodide of Mercury** in **Iodide of Potassium** (Illingworth). A saturated solution of **Boric Acid** to be applied night and morning, or when the irritation is troublesome (Mosse). Pure **Cocaine**, gr. iv., **Ammonio-Chloride of Mercury**, gr. xv.; **Oxide of Zinc**, ℥j; **White Vaseline**, ℥x (Whitla). **Quinine** incorporated in a quantity of lard sufficient to make the application hold together. **Calomel** ℥jss stirred into **Cerate Cetacei** (made with less than the B.Ph. proportion of oil) ℥j until cold (Davey). The application of a roll or pledget of fine soft, tarry **Oakum** (Davey). **Hydrochlorate of Cocaine**, gr. ij; **Sulphate of Atropine**, gr. ¼; **Acetate of Morphine**, gr. ij; **Acetate of Lead Ointment** ad ℥j.

Berger (quoted by "British Medical Journal") speaks well of the insertion of a piece of cotton wool soaked in **Liquor Calcis Chlorinatæ**. If burning arises the plug should be removed, and the parts washed out with a similar lotion. The following was D. Hayes Agnew's favourite prescription:—

℞ Zinc Sulphate | Alum equal parts.
Mix and heat until the water of crystallization is driven off.
For use add ℥j to ℥j of water and apply locally.

It may be noted that Allingham recommends that a bone plug, as big as the forefinger, should be retained at night.

REFERENCES.—Bronson, "New York Med. Record," and "Therap. Gazette." 1894; Sanger, "Centralb. f. Gynäkologie," No. 7, 1894; (quoted in "Medical Chronicle"); More Madden, "Occidental Med. Times," Sept. 1894.

Synopsis.—(Vol. 1894, p. 487.) In cases accompanying heart disease and emphysema, Strophanthus, ♏ 6, twice daily. Electric Souffle. Resorcinol. Menthol, 5 to 10% in alcohol, or 10% in sweet almond oil, or 2·6% as dusting powder, or ½ to 3% in zinc paste.

PSORIASIS. *T. Colcott Fox, M.B.*

A. Neisser believes psoriasis to be a parasitic disease, though no micro-organism has yet been recognized as a cause. The treatment should be founded on this theory, and the action of approved remedies finds in it a rational explanation. Of tar, salicylic acid, pyrogallic acid, and chrysarobin, the most efficacious and satisfactory is unquestionably **Chrysarobin.** It never occasions nephritic or general troubles. The only drawbacks are the staining, and the inflammation it is apt to excite in the healthy tissues around the diseased patches. For big patches on the limbs, one can so adjust the dressing as to limit the action of the drug. Where the patches are small and disseminated, it is well to render the ointment more adherent and consistent, either by using a mixture of equal parts of vaseline and simple ointment, or of vaseline and lanolin (1 to 2), or of a zinc paste. For example :—

℞ Chrysarobin	Anhydrous Lanoline
Zinc Oxide	Yellow Vaseline āā 7·5 grms
Pure Starch Powder āā 5 grms	

Eichhoff's chrysarobin soap powders are more active. Chrysarobin plasters and traumaticines are less effective than an ointment. Long or frequent baths are not necessary, though it is always necessary to cleanse all scales away. The production of free sweating is a very useful adjunct.

Arsenic and iodide of potassium have but little curative power in psoriasis, nor has dieting or an anti-arthritic course with hydropathy proved of much service.

Where deforming arthropathies exist recourse should be had to **Iodine Salts, Salicylic Preparations,** and **Lactic Acid.**

All constitutional anomalies and functional troubles should be set right by the appropriate therapeusis.

A great amount of interest has been taken in this country during the year past in Byrom Bramwell's treatment of psoriasis by **Thyroid Extract.** This remedy has been widely tried, and the results published are somewhat conflicting. We give the originator's latest conclusions founded on the treatment of twenty followed out cases. He regards it as the most valuable internal remedy yet discovered for this disease :—

(1,) That in a very considerable proportion of cases the thyroid treatment produces a temporary cure, the eruption entirely disappearing, and the skin being left in an absolutely healthy condition.

(2,) That in some cases (but they are exceptional) rapid and immediate improvement is produced by small doses.

(3,) That in others, improvement is only produced after distinct symptoms of thyroidism have developed (headache, stomach derangement and vomiting, diarrhœa, marked acceleration of pulse, elevation of temperature, etc.). *N.B.*—The condition of the tongue and the general condition of the patient are more important therapeutic guides than the pulse. A rate of 120, or even 130, is of little importance.

(4,) That in some obstinate cases the disease ultimately yields to the administration of very large doses, continued for a long time.

(5,) That no case should be regarded as hopeless, unless distinct symptoms of thyroidism have been produced, and the largest dose which the patient can take without being markedly upset has been continued, after the production of distinct thyroidism, for at least a couple of months. *N.B.*—There is often at first an apparent aggravation and extension of the disease, which is, however, only temporary.

(6,) In other cases of psoriasis the thyroid extract seems to produce little or no benefit.

(7,) That in many of the cases in which the eruption is completely cleared off, and the skin left in an absolutely healthy condition, after the thyroid treatment, a relapse, sooner or later, occurs. Whether in cases of this kind the relapse can be prevented, and the skin kept in a healthy condition by the continued use of small doses of the remedy, his experience does not as yet enable him to say.

(8,) So far as his present experience enables him to judge, old-standing chronic cases, in which the skin lesions are stationary, are, as as a rule, more easily cured (although some of them only yield after very large doses) than recent and slighter cases in which the spots of eruption are small, and in which the disease is constantly coming and going, or in which it is actively developing.

Bramwell begins with small doses, because the remedy is a powerful one, and it is impossible to forecast how it will be borne in any particular case. The quantity is then gradually increased until distinct symptoms of thyroidism are induced. In many cases of psoriasis the administration of large doses (30, 40, or even more, five-grain tabloids per diem) is all important. Bramwell prefers the dry extract in the form of tabloids or palatinoids. That psoriasis is acted upon as here set forth there is little doubt, and the contrary experiences recorded may be ascribed to several causes. In the first place, there is a wide difference in the value of the preparations used, and in the next place but few observers have pushed the remedy like Bramwell, because it has not been convenient or right to do so amongst ambulant patients,

and Bramwell kept his severe cases in bed. The writer has given it largely to ambulant patients, and obtained a remarkable success, without any ill-effects on the general health, in his earlier cases. Later on he had a succession of more obstinate cases in which he could not press the dose, or where a stronger idiosyncrasy seemed to exist. Children appeared to do best. It is certainly a remedy with which one must carefully feel one's way at the start.

Then arises the question, Is it a more efficacious remedy than many we already possess? The answer is, Certainly not, though such an addition to our resources is to be welcomed. Abraham's large experience (sixty-five cases) should be noted. It was, on the whole, unfavourable.

Bayet finds that **Gallanol** (anilide of gallic acid) has a real effect on psoriasis. Its action is much weaker than that of chrysarobin, but it does not stain, has no perceptible odour, and can be applied to the head and face.

Barendt has also used it in children and young adults. He rubs in green soap (Germ. Ph.) at night, or to the face and scalp Hebra's spiritus saponis alkalinus, on moist flannel, for five minutes. The following day a hot bath is taken, and after two or three repetitions all scales are removed. Then a 2 per cent. ointment of gallanol in benzoated lard is rubbed in at night, and every fourth night a hot bath is taken. If the grease is uncomfortable, equal parts of Venetian talc, oxide of zinc, and starch are dredged on. The gallanol ointment was gradually increased to strength of 12 per cent., and as improvement set in the hot bath and green soap were used only once a week. When the eruption has faded, a 2 per cent. salicylic or β-naphthol ointment in benzoated lard may be rubbed in and arsenic administered.

REFERENCES.—Byrom Bramwell, "Brit. Med. Journ.," March 24, 1894, and "Brit. Journ. Derm.," July, 1894; Abraham, Med. Soc., Lond., with discussion by Morgan Dockrell, Leslie Phillips, and others., "Brit. Med. Journ.;" Talfourd Jones, Ibid.; Brooke, Ibid.; Limont, Ibid.; Canhell, "Therap. Gaz.," Sept., 15, 1894: Jackson, Amer. Derm. Assoc., May, 1894 (discussion by Hyde, Hartzell, and Stelwagon); Lustgarten and Fox, New York Derm. Soc.; Gordon Dill, "Lancet," Ménau, "Journ. de Méd. de Bordeaux," June 10, 1894; Squire, "Brit. Med. Journ."; Bayet. "La Clinique," Sept., 1893 (reported "Brit. Med. Journ."); Barendt, "Liverp. Med. Chir. Journ.," July, 1894.

Synopsis.—(Vol. 1894, p. 488.) Thyroid Gland Extract, 5 m doses thrice daily. Gallanol. Hydrastin, 10% ointment; Alumnol, 2½%. Alternating Currents. Chrysophanic Acid. Creasote, Liquor Carbonis Detergens and Ammonio-Chloride of Mercury in an ointment. Warm baths with liquor carbonis detergens or carbonate of soda, or both (℥j to

gallon). **Europhen.** Friction with 20% dried **Ethylate of Sodium** in **Olive Oil.** Solution of **Chrysarobin** in **Chloroform** (1 in 7) mixed with **Oleum Deelinæ** for scrubbing affected parts. ℞ Oil of Cade, 15 to 100 grms.; Soft Soap, q.s., for emulsion; Neutral Glycerine of Starch, 90 grms.; Salicylic Acid, 3%. **Chrysophanic Acid,** 10% solution in **Chloroform** painted on. 10% **Naphthol Solution.** Internally, **Arsenic, Potassium Iodide** in huge doses.

PUERPERAL ECLAMPSIA.

Synopsis.—(Vol. 1894, p. 489.) **Milk Diet** as preventive; for convulsion **Venesection,** ℥xvj, followed by **Chloral** in strong patients. **Strontium Lactate,** gr. 15.

PUERPERAL SEPTICÆMIA. (See also "Fevers.")

Synopsis.—(Vol. 1894, p. 490.) As uterine douches **Creolin** 2%, **Carbolic Acid** 5%, **Thymol** 1 in 1000, or **Corrosive Sublimate** 1 in 2000, followed in any case by douche of distilled or boiled water. Irrigation with **Lysol,** 1 to 100, and swabbing out uterus with 15 volume **Hydrogen Peroxide Solution** and finally **Corrosive Sublimate** 1 to 5000 at 110° Fh. **Curettage,** irrigation and application of **Iodine Tincture** to uterine cavity. **Stimulants, Iron, Quinine,** and **Strychnine.** Free purgation if peritonitis threatens. Application of pure undiluted **Carbolic Acid** to uterine cavity. For suppurative peritonitis, abdominal section and douching of peritoneum with **Boric Acid Solutions.** Pessaries containing **Iodoform,** 20 grains, used twice daily.

RAILWAY SPINE.

Synopsis.—(Vol. 1894, p. 493.) **Rest-cure.**

RECTUM.

Synopsis.—(Vol. 1894, p. 493.) ℞ Ext. Belladonna, gr. ¼ to ½; Cocain Hydrochlor. gr. ¼ to ½; Ol. Theobrom., gr. x; M. et ft. Suppos. to allay spasm from irritable ulcer; or: ℞ Ext. Conii, ʒij; Ol. Ricin., ʒiij; Ung. Lanoline q.s. ad ʒij; M. et ft. Ung. Smear over anus five minutes before a motion is expected, and also after evacuation. Locally, **Nitrate of Silver,** gr. 10 to 30 to ʒj, every twenty-four or forty-eight hours after using **Cocaine,** 4%, and followed by an ointment of **Iodoform,** 30 grs. to ʒj, or **Iodol.** Wax or tallow bougie introduced daily, after applying cocaine or belladonna ointment. **Incision** and **Dilatation.** Chronic inflammation treated by **Carbolic Acid Enemata,** 10 drops in two tumblers of very hot water. 1% **Salt Solution** injections followed by injection of **Olive Oil,** ʒij, for rectal inflammation in children. For cancer of rectum daily irrigations of 1½ pints of 10 or 20% tepid solution of **Naphthol,** giving by mouth at each meal: ℞ Salol, Benzo-Naphthol, Soda Bicarbonate, āā gr. v. For one cachet.

RENAL CALCULUS.

Synopsis.—(Vol. 1894, p. 494.) **Piperazine. Glycerine** internally, 1 to 5 cubic inches for a dose.

RHEUMATISM.

Synopsis.—(Vol. 1894, p. 500.) ℞ Salol, Ether, āā, 4 parts; Collodion 30 parts; M. To apply to an inflamed joint.

RHEUMATOID ARTHRITIS.

Synopsis.—(Vol. 1894, p. 506.) Iodide of Iron with small doses of Arseniate of Sodium. Sulphur in small doses. Cod-liver Oil.

RHINITIS.

Synopsis.—(Vol. 1894, p. 506.) For ozæna cleanse with a steam spray of **Soda Bicarbonate** solution, or **Alumnol** solution, 5%, or **Diaphtherin**, ½ to 1% solutions. As a snuff for chronic rhinitis: ℞ Menthol, Citric Acid, Lithium Carbonate, Powdered Benzoin, āā partes æquales. *Sig.*—5 or 6 pinches daily for each nostril. For insufflation in ozæna: ℞ Sodii Benzoat., Iodoform, āā ʒiij; Picis Liq., gtt. v; M. Ft. pulv. Insufflate daily.

RHINOSCLEROMA. *T. Colcott Fox, M.B.*

Ducrey[1] has written an important memoir founded on three Italian cases of rhinoscleroma, or, as he suggests, infectious scleroma of the respiratory passages. Extension by continuity of tissue is the common mode of progression, but the origin of separate centres by auto-infection cannot be excluded. Microscopic and bacteriological examination is advisable for a sure diagnosis. A special micro-organism gives rise to a specific granuloma. Laboratory animals are refractory to inoculation of diseased tissue or pure cultures, but sometimes definite results appear to be reached.

The best treatment is the complete surgical removal of the diseased tissues. No relapse occurred in one case. If the disease be too extensive for this, parasiticides, as **Sublimate, Phenic Acid**, or **Thymic Acid**, should be used after partial ablation.

Stoukowenkoff[2] has successfully treated a case by injections of **Fowler's Solution,** at first 1 per cent., gradually rising to 12 per cent. The complete cure was obtained at the end of fifteen months, after two hundred and twenty-two injections.

REFERENCES.—[1]Ducrey, "Giorn. Ital. d. mal. ven. e della pelle," Nov., Dec., 1892, p. 433 and 510, March and June, 1893, p. 83 and 279, Breda, Ibid., Sept., 1893, p. 402; [2]Stoukowenkoff, quoted in "Ann. de Derm. et de Syph.," 1894, p. 854.

ROSEOLA. (See also "Measles" and "Scarlet Fever.")

ROTHELN.

Dr. Atkinson thinks that besides the early subsidence of the initial fever and the enlargement of the glandulæ concatenatæ, the periods of incubation and infectivity will give some assistance in distinguishing rötheln from scarlatina. The report of the Clinical Society on this subject says, with regard to rötheln, that the twelfth to the eighteenth day after the cessation of exposure is the time at which the rash is most likely to appear in epidemics in schools when a patient is isolated as soon as the rash appears. In a few cases the incubation period is

only eight or nine days, and in a small number it may be only five or six days. The quarantine period must not be less than twenty-three days. As regards infectivity, the patient is infectious two or three days before the rash appears, and while it is out; but it diminishes rapidly and altogether ceases in a week in mild cases, and in the more severe when desquamation is over. In the former class isolation for a week, to be followed by a bath and disinfection of clothes, is recommended, while in the latter it is advisable for isolation to be continued for two weeks, to be followed by disinfection, in order to prevent the spread of the disease in schools. The infection does not appear to be long retained by clothes. With respect to scarlet fever, the report remarks that the incubation period lasts usually between twenty-four and seventy-two hours; occasionally it is less than twenty-four hours. It is very doubtful whether it ever extends to eight days. When infection is conveyed by milk the period would seem to be two days or less. The infection period lasts from the onset of the symptoms until desquamation is complete, and may still exist for eight weeks after the commencement of the disease. It is readily preserved and conveyed by fomites. A person who has been exposed to the infection of scarlet fever may, after disinfection of the clothes and other fomites, be pronounced to be safe if at the end of seven days he is free from fever and sore throat.

REFERENCE.—"Lancet," Sept. 23, 1893.

SALPINGITIS.

Synopsis.—(Vol. 1894, p. 507.) Mild applications of Iodine and Glycerine, equal parts to vaginal vault, accompanied by Glycerine Tampons. Daily warm Sitz Baths at 105° Fh. for half an hour, and Blisters over the affected parts.

SARCOMATOSIS CUTIS.

Synopsis.—(Vol. 1894, p. 507.) Arsenic internally.

SCABIES.

Synopsis.—(Vol. 1894, p. 508.) ℞ Sulph. Sublimat., ℥j; Bals. Peruv., ℥j; β-Naphthol, grs. xxx—lx; Adip. Benz. vel Ung. Petrolei ad ℥iv. For rubbing in adults: ℞ β-Naphthol, 15 grms.; Black Soap, 50 grms.; Chalk, 10 grms.; Lard, 100 grms.; M. Benzine. ℞ Hyposulphite of Sodium, Distilled Water, āā ℥vj. Apply the lotion, allow it to evaporate, and before going to rest apply: ℞ Dilute Hydrochloric Acid, ℥iv; Distilled Water, ℥vj.

SCARLATINA.

Synopsis.—(Vol. 1894, p. 509.) When peeling begins, use tepid sponging and a superfatted hard soap containing Resorcin and Salicylic Acid, 3% of each. Carbolic Acid, gr. 2, twice daily as a prophylactic. Digitalis and Ammonium Carbonate said to be the safest drugs. Thorough cleansing of throat every half hour. Hydro-Naphthol Soap (5%) hastens peeling and prevents contagion.

SCARLET FEVER. (See "Fevers.")

SCIATICA. *Allan McLane Hamilton, M.D., New York.*

Weir Mitchell's[1] management of this disease is thus summarized: "In a mild case (a first attack), having made a careful search through the organs and secretions, and provided for any obvious constitutional disorder, he orders rest in bed, constant and prolonged till recovery is assured, and **Dry Cups** used thoroughly and early. If cupping be not used, he orders mustard, a stripe at least three inches wide, from notch to ankle; or, at least, to the knee. If these means fail, he at once goes to the means he employs in chronic cases: He uses a firm bandage, made of pure flannel, from foot to groin, re-applied twice a day. The leg is slightly bent at the knee, and kept extended at the thigh, and in this position is secured to a right side-splint from axilla to ankle. After a few days the joint-angles are slightly changed at each dressing. Still later, as the pain fades, the joints are mildly and passively exercised whenever the bandages are renewed. Usually three weeks pass before he can begin to abandon treatment; and a much longer time is required in old cases. Later, he takes off the splint in the day, but leaves the bandage on; at night he replaces the splint. Finally he gives up the splint; and, with the presence or absence of pain as the sole guide in like manner omits the bandage, first in the day, and afterwards at night. Meanwhile, with **Cod-liver Oil, Iron,** good diet, care of the bowels, and forbidding effort at stool, he carries the patient through. When the pain is quite gone he uses **Massage** once a day before replacing the bandages. Points of persistent pain, near the close of this course, he treats by counter-irritants. When the patient is allowed up, he permits him first to stand, then to walk, with the aid of crutches. He does not permit sitting during the first week that the patient is up.

"In the true sciatica cases, which defy medical means, he employs **Nerve-Stretching,** followed up by the roller and splint-rest. Until he can permanently ease the ache, he occasionally uses narcotics. He says **Cocaine** is the best, in from ¼ to ½ grain hypodermically."

Lawrence[2] recognizes the use of **Nitro-glycerine** in obdurate cases of sciatica, using 1 drop three times a day of a 1 to 100 solution, gradually increasing the dose. In a case reported, relief was immediate, the patient being able to resume his trade (carpentering) in ten days without any remnant of the trouble.

REFERENCES.—[1] "The Med. News," (Philad.) vol. lxiii., No. 1, 1893; [2] "Med. Press," Jan., 1894.

Synopsis.—(Vol. 1894, p. 511.) Acupuncture. Dry Cupping in mild and early cases, followed by free application of **Mustard** and **Molasses.**

If this fails **Bandage** from foot to groin with **Side Splint**, apply passive motion, and after about three weeks use splint only at night. Avoid sitting. Either standing or walking must be adopted. **Tonics** and **Enemata** to prevent straining at stool. ℞ Pulv. Opii. Pur., grs. xij; Pulv. Ipecac. Ver., gr. xij; Ext. Cascar. Liq., q.s.; Sod. Salicyl., ʒiss; M. Ft. Pil. 12. *Sig.*—1 or 2 for a dose. **Nitro-glycerine**, ♏j t. d. of 1% alcoholic solution, increasing dose up to 5 ♏.

SCLERODERMIA. *T. Colcott Fox, M.B.*

Several authors record cases of sclerodermia greatly benefited by prolonged **Massage.** It must be borne in mind, however, that there is in many cases a natural tendency to recovery.

Schütte, encouraged by a former success, treated a wide-spread sclerodermia by prolonged **Sitz Baths,** followed by massage, with 5 to 10 per cent. **Salicylic Vaseline.** The disappearance of the sclerodermia was probably in great measure due to the treatment. Sims used **Glycerine.** Allan Jamieson considers that massage is valuable in diffuse symmetrical sclerodermia with induration. Beer, of Vienna, reports further successes. The **Faradaic Current** was used to combat muscular atrophy.

Boisseau du Rocher treated a case of sclerodermia of the dorsum of the foot with **Static Electrical Discharges** of high potential and powerful delivery by means of a special apparatus.

REFERENCES.—Schütte, quoted "Ann. de Derm. et de Syph.," 1894. p. 555; Jamieson, Edin. Med. Soc.; Sims, West Lond. Med. Chir. Soc; Beer, Vienna Med. Soc.; Boisseau du Rocher, "Journ. de Med. de Paris," vol. vi., No. 6, p. 70, 1894.

SCROFULA.

Synopsis.—(Vol. 1894, p. 512.) **Creasote**, gtt. j t. d., increased to 7½ or 10½ grs. daily, given immediately after a meal, and continued many months.

SEA SICKNESS.

Synopsis.—(Vol. 1894, p. 513.) **Hot Foot Bath.** Placing hands in hot water, and ice on head and spine, if hyperæmia be present. **Caffeine, Antipyrine** or **Bromide of Sodium** by rectum. In anæmic cases, **Atropine** and **Nitro-glycerine** simultaneously given. **Strychnine** and **Natro-benzoate of Caffeine. Ergotin. Whiskey** and food per rectum. Horizontal position. Copious draughts of **Hot Water.** Frequently repeated and small doses of **Creasote** with **Lime Water** and infinitesimal doses of **Ipecacuanha. Oxalate of Cerium,** 5 grs. hourly for three or four hours. **Bromide of Sodium.** Equal quantities of **Chloralamide** and **Bromide of Potassium**—*i.e.*, Chlorobrom—dose ʒss to j. Bandaging eyes, together with recumbent position.

SINUS-PHLEBITIS (Otitic). *W. Milligan, M.D.*

Any of the venous sinuses in immediate relation with the temporal bone may become thrombosed, as the result of infective middle ear disease. The relation of the sigmoid sinus to the mastoid antrum,

mastoid cells, and middle ear, account, however, for its more frequent implication. The petrosal, the cavernous, and even the bulbus venæ jugularis, may be similarly affected either from direct transmission of pathogenic organisms from the middle ear, or indirectly as the result of the extension of the thrombic process from an already affected sigmoid sinus. As a rule septic thrombosis is the result of chronic infective disease of the tympanic mucous membrane and its adnexa, although it may occur as a complication of acute inflammatory affections of the mouth, pharynx, tonsils, etc., where rapid extension to the middle ear has taken place *per tubam*. In the majority of cases previous destruction of bone has occurred. The walls of the sinus are then in immediate relation with a carious or necrosed area of bone, while frequently a fistulous track will be found leading to the mastoid antrum or middle ear. They may be thickened and inflamed, or broken down and ulcerated. In rare cases, however, the infective organisms have been carried along the course of the small venous or lymphatic radicles which exist between the mucous membrane of the middle ear and the walls of the lateral sinus, no bone lesion being discoverable. The course of sinus thrombosis is somewhat irregular.

Death may take place rapidly from exhaustion and collapse, or pyæmic metastatic deposits may occur in the lungs, liver, kidneys or joints, and death ensue from gradual loss of strength and marasmus. A fatal issue may also be induced as the result of the toxic effect of the pyæmic blood upon the central nervous system, or simply as the result of hyperpyrexia.

Septic thrombosis may be assumed to exist if in the course of a chronic suppurative middle ear catarrh there is a sudden cessation of discharge, accompanied by persistent pain in and around the ear, a high temperature with marked fluctuations, frequently repeated rigors, vomiting, rapid pulse, and constant headache.

Ballance[1] states that the following group of symptoms occurring together are pathognomonic of the disease: (1,) A history of a purulent discharge from the ear for a period of more than a year; (2,) A sudden onset of the illness with headache, vomiting, rigors, and pain in the affected ear; (3,) An oscillating temperature, reaching 103°—105° F. and then dropping below 100° F.; (4,) Vomiting repeated day by day; (5,) A second, third, or more rigors; (6,) Local œdema and tenderness over the mastoid, or in the course of the internal jugular vein; (7,) Tenderness on deep pressure at the posterior border of the mastoid and below the external occipital protuberance; (8,) Stiffness in the muscles of the back or side of the neck; (9,) Optic neuritis.

Where extension has taken place along the emissary veins, infiltra-

tion and induration of the subcutaneous connective tissues will be found. Infective sinus-thrombosis may, however, co-exist with other intracranial lesions, *e.g.*, abscess, or meningitis.

In such cases the symptoms due to the thrombic process usually gain the ascendency, and may mask other concomitant lesions. In certain cases, the difficulty of determining which is the predominant lesion is so great that it is advisable in every doubtful case of serious intra-cranial trouble, secondary to ear disease, to follow a definite plan of operative procedure. Urban Pritchard[2] recommends the following *modus operandi*:—

(1,) To thoroughly open the mastoid antrum and explore the mastoid cells.

(2,) Failing to find sufficient evidence to account for the whole of the symptoms, to enlarge the wound in the skull so as to expose the middle and posterior cerebral fossæ above and below the lateral sinus, which should then be explored by means of a hypodermic syringe. At the same time subdural abscesses should be carefully looked for.

(3,) If a clot be found in the sinus the internal jugular vein should be tied, the sinus opened and cleared of its contents.

(4,) If there be any suspicion of cerebral or cerebellar abscess, exploratory puncture should be made above and below the sinus, and pus if found evacuated.

The prognosis in such cases is necessarily grave, but many lives are now saved by timely operative interference.

Following the suggestion originally made by Horsley, that the internal jugular vein be exposed and tied so as to prevent the dissemination through the system of the disintegrating and septic clot, many surgeons at home and abroad have operated with success. The primary source of the lesion should be first dealt with. Where this is due to the presence of chronic suppurative middle ear disease, the mastoid antrum should be opened and all purulent *débris* cleared out. The middle ear should then be opened up according to the Schwartze-Stacke method, granulation tissue and carious ossicles removed, and thorough cleansing with antiseptics performed. The bony covering of the sigmoid sinus should now be removed, either by means of a chisel, gouge, or Hoffmann's bone forceps, in such a way as to expose from $\frac{3}{4}$ to 1 inch of the vertical portion of the sinus. Absence of pulsation and a feeling of resistance suggest the presence of a clot; absence of pulsation and a feeling of fluctuation suggest that the clot has become broken down. To ascertain the contents of the sinus a hypodermic needle may be inserted. The next step is to expose the jugular vein in the neck, place two ligatures round it and tie between.

The sinus is now split up for at least an inch of its extent, the distal end from which free bleeding may take place packed with iodoform gauze, and the peripheral end cleared of its thrombus by means of a small Volkmann's spoon. Free scraping is at times necessary, as the clot may have become intimately adherent to the inner wall of the sinus. A warm solution of corrosive sublimate (1 to 2000) is now to be syringed from the peripheral opening of the sinus to the wound in the neck (the upper ligature upon the vein having been removed), and so all *débris* washed way. After careful cleansing with warm antiseptic lotions, the parts should be dusted with a powder consisting of equal parts of iodoform and boracic acid powders, packed with iodoform gauze, and sutures inserted. In favourable cases the process of repair goes on rapidly. The patient's strength must be maintained by means of a nourishing diet, tonics, such as quinine, iron, phosphorus, etc., being given at the same time.

REFERENCES.—[1] "Lancet," Nos. xx. and xxi., vol. i., 1890; [2] "Archiv. of Otology," vol. xxiii., Nos. 1 and 2.

SMALL POX.

Synopsis.—(Vol 1894, p. 514.) Cocaine, 4% solution, 1 drop for every year of age four times daily, or pastilles containing $\frac{1}{2\frac{1}{4}}$ gr. with or without Pepsin, or $\frac{1}{4}$ gr. hypodermically. Boric or Salicylic Acids locally. A mask consisting of three layers of Boric Lint soaked in Boric Lotion, covered by waterproof and retained in position by gauze bandage, has been used to abort pustules.

SNAKE BITE.

Synopsis.—(Vol. 1894, p. 514.) Strychnine hypodermically for viperine poisoning. In scorpion poisoning, Chloroform Stupes relieved pain. Hydrate of Chloral pure, rubbed on the part, relieved also, and was more permanent. Menthol-camphor and Butyl-chloral-camphor were also found efficacious.

SPERMATORRHŒA.

Synopsis.—(Vol. 1894, p. 515.) Cold Sitz Baths from five to twenty minutes daily, at bed time from 50° to 60° Fh. These are contra-indicated in sexual irritability, when hot baths are substituted, 90° to 98°. Testicular Juice injected hypodermically. Cimicifuga Tincture, 10 to 30 drop doses after meals. ℞ Ext. Aloes, gr. iij; Ext. Belladonnæ, gr. ij; Ext. Hyoscyam., gr. iv; Pulv. Camphoræ, gr. iv; M. Ft. Pil. 12. *Sig*—1 pill every night.

SPINAL ACCESSORY (Spasm of).

Allan McLane Hamilton, M.D., New York.

Gerhardt reports the following case, the patient being a man sixty-two years old who had years before been injured by a falling building, and had since had some tremor of the head. He is described as holding his head obliquely with the right ear drawn toward the shoulder,

the chin projected forward and turned somewhat upward and to the left, and the right shoulder somewhat elevated. The right sterno-cleido-mastoid, and upper part of the right trapezius muscles were unduly prominent, and hard to the feel. There was constant antero-posterior rocking motion to the head. The right vocal cord in the abduction of inspiration made a much greater excursion than the left, and showed a series of short, interrupted, clonic movements. By placing the finger over the lower part of the thyroid cartilage on the right side, corresponding movements could be felt. The right posterior palatine arch stood higher than the left; the uvula was directed slightly toward the right side.

The unusual involvment of the laryngeal muscles in spinal accessory spasm tends to verify the present belief that the nerves of the laryngeal muscles take their origin in the accessory nucleus.

The almost purely inspiratory occurrence of the clonus speaks for the separation of the breathing and voice function in the course or origin of the laryngeal nerves.

REFERENCE.—"Münch. Med. Woch.," March 6, 1894.

SPINE (The Typhoid). *Allan McLane Hamilton, M.D., New York.*

An interesting condition which occurs as a sequelæ of enteric fever was originally described by Gibney in 1889, and by him called the "typhoid spine." It is essentially a peri-spondylitis, an acute inflammation of the periosteum and the fibrous structures which hold the spinal column together. Acute pain was produced by the slightest movement, either lateral or forward, and there was no febrile disturbance or neuralgia. Others have recognized this rather common sequel of typhoid fever, and Osler is of the opinion that periosteal troubles are by no means rare symptoms, but may develop a long time after convalescence has been well established. Pain may be found about the sternum, ribs, and inflammation may advance to suppuration. In fact, this is the rule. He has known of several examples where periosteal swelling disappeared without any formation of pus. He, however, differs from Gibney in regard to the duration and intensity of the pain which the latter considers so important an indication, and of which he cannot conceive. Ostler's patients were, as a rule, neurasthenic, and he is of the opinion that some of them were simply examples of an exaggerated condition of spinal irritation, or hysterical spine, and, in fact, his experience has led him to think that a variety of disorders of a hysteriform character, with a lowered will power, exist without any periosteal inflammation whatever.

REFERENCE.—"Brit. Med. Journ.," Oct. 7, 1893, p. 780.

SPLEEN (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Splenectomy.—The conditions for which the spleen has been successfully removed, include cases of rupture, of "movable spleen," and of simple hypertrophy with or without concomitant anæmia. On the other hand splenectomy in leukæmia has been almost invariably fatal, and is an unjustifiable operation.[1]

Dr. F. Kammerer[2] records a fatal case of splenectomy for leucocythæmic enlargement. The patient died on the table from shock. The spleen weighed seven and a half pounds. The tendency to hæmorrhage was very marked, and the adhesions were numerous and very vascular.

Ceci[3] records two successful cases of splenectomy. The first was one of malarial hypertrophy, which had been treated medicinally without good result; the second a child, aged eleven years, had suffered from essential idiopathic hypertrophy for two years. Both were anæmic. Good general health was regained in each case.

From an analysis of one hundred and forty-five reported cases of splenectomy he deducts a general mortality of 51·6 per cent. The percentage mortality in leukæmia is 91·4, and in essential idiopathic hypertrophy 11·5.

James P. Warbasse[4] refers to a case of idiopathic hypertrophy of the spleen operated upon in Czerny's clinic, which after splenectomy, developed an interesting condition of the blood. The proportion of white to red corpuscles had been normal, but on the day following operation the ratio was 1 in 60. Gradually this excess of white cells subsided, and the ratio again became normal (1 in 500) at the end of four months.

Vulpius regards, of very great importance, the fact that eleven observations showed that after splenectomy there was a more or less rapid and pronounced increase in the number of leucocytes. In two cases this could not be assigned alone to the splenectomy, for the patients were suffering from leukæmia, which continued to progress, in one case with very great rapidity.

Hereafter, every operation should show, by careful examinations of the blood, whether the multiplication of leucocytes is invariably the rule or is simply a coincidence in these cases.

Dr. Murphy[5] publishes the notes of a successful case of splenectomy for enlargement of the spleen. The patient, a woman aged forty-five, gave a history of influenza two and a half years previously, followed by paralysis of speech, and of the right hand. For more than a year she had been aware of a painful swelling in her left side; in addition she complained of loss of weight, shortness of breath, and cyanosis

for several months. There was no leucocythæmia. The outlying portions of the pedicle which were thin and broad, measuring about five inches, were secured in separate portions by seven silk ligatures ; the central portion, which contained large vessels, was secured by the Staffordshire knot. Seven weeks after the operation the patient expressed herself as being in better health and spirits than she had been for two years. The spleen weighed one and a half pounds and had an abscess cavity near the lower end, containing about half an ounce of pus ; the abscess was probably the result of infarction.

Dr. W. J. Conklin[6] reports the successful extirpation of a hypertrophic spleen, the pedicle of which was twisted through three complete turns.

Three months previously a small ovarian cyst had been removed, but it was not thought advisable at that time to remove the spleen. Recovery was complete, save for a troublesome tendency to drowsiness. No examination of the blood was made.

Axial Rotation of the Spleen.—At the General Hospital, Birmingham, on Jan. 2nd, 1894, Dr. Malins[7] dealt with a very interesting case, in which he removed the spleen, weighing two pounds five ounces. The patient, a woman aged thirty, was admitted two days previously with a tumour of the abdomen occupying a central position and dipping into the pelvis. There was some peritonitis present. The abdomen was opened in the median line, and a peculiar condition was found. The spleen, altered in shape and position, was rotated on its attachment for about half a revolution ; it was dark coloured and much distended, and the vessels on the distal side of the strangulation were completely thrombosed. A prepared silk ligature was tied round the pedicle and the organ was removed. The abdomen, containing reddened fluid, was carefully sponged out and some adhesions of the omentum were tied.

The patient made an uneventful recovery, and left the hospital on Jan. 25th, in good general health. No abnormal elements were found in the enlarged organ. Two days after operation, and again fifteen days after, the blood was examined and found practically normal.

On the 28th April the following estimate was made : red corpuscles 4,840,000 per cubic m.m. ; white corpuscles 30,000 per cubic m.m. ; and hæmoglobin 50 per cent. The most remarkable point was the presence in the blood of fairly considerable numbers of large white nucleated corpuscles, varying in diameter from 30μ to 50μ, in which were contained several red-blood cells, in some, twenty or more. In individual ones the red corpuscles appeared to be undergoing a process of disintegration, while small masses of blood pigment could

be observed in those where the change was most marked. The last examination was made on May 23rd, when a reduction in the number of red cells was noted, these having fallen to 3,300,000 per cubic millimètre, there being a still more marked number of leucocytes, 50,000 white corpuscles per cubic millimètre.

Trinkler[2] reports a case of solitary hydatid cyst of the spleen successfully treated by Volkmann's operation. The symptoms were those of dyspepsia extending over a period of two years. The hydatid thrill was easily obtained in the large tumour.

Trinkler strongly objects to aspiration, and refers to several cases where fatal peritonitis followed this practice.

Abscess of the Spleen.—Nolan[9] in describing the following case, remarks on the difficulty of its diagnosis, and mentions that the cases recorded in medical literature, which resulted in recovery after operative treatment, only number five. The patient, a woman, twenty-five years of age, six weeks after confinement, began to feel ill and feverish. Typhoid fever was suspected. Suddenly she had an attack of acute pain in the left side, followed by difficulty in breathing. On examination it was found that a pleuritic effusion had taken place in that spot, and that the spleen was greatly enlarged. There was, however, no tenderness. The diagnosis was now altered to splenitis, perisplenitis, pleuritis, and an operation was decided on. On the outer side of the left rectus a long incision was made, extending from the arch of the ribs straight downward. A cavity was laid open, from which about a litre of pus of a dull brown colour and a faintly sweet smell escaped. The peritoneal cavity was not opened. After draining, the wound was plugged with iodine gauze. Recovery was uninterrupted, and the pleuritic effusion was entirely absorbed. The entire absence of pain was a remarkable feature of the case. The question whether the patient had really been suffering from typhoid fever or whether the development of the abscess was connected with parturition is impossible to decide. In both cases the proximate cause must be looked for in an infectious embolus.

REFERENCES.—[1] "Lancet," May 5, 1894; [2] "Annals of Surgery," June, 1894; [3] "Il. Policlinico," Aug. 15, 1894; [4] "Annals of Surgery," Aug., 1894; [5] "Brit. Med. Journ.," Nov. 3, 1894; [6] "Annals of Surgery," Oct., 1894; [7] "Lancet," Jan. 13, 1894, and Ibid, Sept. 15, 1894; [8] "Rev. de. Chir.," Feb., 1894; [9] "Brit. Med. Journ." Suppl., April 14, 1894.

SPRAIN.

Synopsis.—(Vol. 1894, p. 527.) Strapping the ankle and walking at once after injury. Salicylate of Soda, ʒj, in twenty-four hours.

STEM PESSARY (On the use of the). *Fancourt Barnes, M.D.*

The stem pessary was introduced by Sir James Simpson as a means of treating certain cases of anteflexion of the uterus. Its mode of action is to straighten the flexed uterus, and maintain it in a normal attitude. It is therefore clearly unsuitable for cases of displacement of the uterus where the uterine axis is normal.

Cases of anteflexion of the uterus may be divided into two groups. *First*, the simple uncomplicated cases; *second*, the cases in which there are other associated pathological conditions of the pelvis. In the first group the anteflexion is the only pathological condition present, or there may be some associated error of development such as a very small uterus or stenosis of the cervix. Cases in the second group are complicated by inflammatory changes, or by the development of a tumour in the body of the uterus.

A number of uncomplicated cases are met with in which there are absolutely no morbid symptoms, and in such no treatment is indicated. Other cases, however, present a distressing train of symptoms, such as dysmenorrhœa, often menorrhagia, pain in the back and lower abdomen, and sterility. I do not however advocate the use of the stem pessary in all cases of anteflexion presenting such symptoms.

The presence of any progressive inflammatory process, or of a new growth, or of joint adhesions, contra-indicates its employment. I therefore restrict the use of the stem to cases in which flexion is marked, and is the obvious cause of the symptoms, while the uterus remains free from adhesions, and there is no other pelvic disease. Stenosis of the cervix is not a contra-indication. for the cervix may be divided as a preliminary to the use of the stem.

In its simplest form the stem pessary consists of a straight or slightly curved cylindrical rod, provided with a collar to prevent it from slipping into the uterine cavity. This form is however very difficult to retain in position unless the patient be kept in bed, and modifications of it have therefore been devised which are not open to this objection. A 'Combination Stem Pessary' consists of an intra-uterine stem fitted to some form of vaginal pessary, such as the Hodge; this serves the double purpose of retaining the stem *in utero* and supporting the uterus.

When in any case it has been decided to use the stem pessary, the uterine cavity must be carefully measured with the sound, and a stem selected a little shorter than the uterus, to obviate injurious pressure of the point of the instrument upon the fundus. In introducing the stem it is sometimes necessary to employ an anæsthetic, and careful antiseptic measures should be always adopted. If the cervical

canal be too narrow to admit the stem, preliminary dilatation by means of laminaria tents may be practised, or in extreme cases, the cervix divided. The stem should be introduced rather by drawing down the cervix with the vulsellum than by pushing the stem into the uterus, just as the finger is passed into a glove by drawing the latter over it. If the flexion be so great that the stem cannot be made to pass the angle, it is best to divide the posterior lip of the cervix, as the stem can then be carried back so as to bring it more nearly into the line of the uterine axis. If the cervix has been divided an interval of a few days should be allowed to elapse before the stem is introduced, to facilitate healing of the wound. For a week or more after the introduction of the stem the patient is kept upon her back; she is then allowed to get up, and if the stem is retained in position it may be worn continuously for several weeks. If the instrument shows a tendency to slip, some form of the "Combination Stem" must be adopted.

I do not claim for the stem pessary that it will cure all cases in which it may be employed, but very marked benefit attends its use in suitable instances. Its presence is usually well tolerated, speedy relief from pain ensues, and menstruation may become entirely painless while the stem remains *in situ*. After wearing the instrument for some weeks the patient may be finally relieved of her troubles.

STENOSIS (of the Larynx). (See "Larynx.")

STOMACH (Diet in Diseases of the). *Robert Saundby, M.D.*

The notion prevails to some extent amongst the medical profession that dietary rules are founded on no very sound basis, and often only represent the fads, idiosyncrasies or personal opinions of the authority propounding them; in fact there exists a certain degree of scepticism of the possibility of formulating definite principles which shall be applicable to all sorts and conditions of men. While not denying that the practice of some eminent physicians may have given reason for doubting its scientific basis, I am convinced that there is a sufficient foundation of positive knowledge, based on direct experiment and careful clinical observation, to enable us to lay down certain general rules and principles for the feeding of the sick, and especially of those who are suffering from diseases of the stomach.

We possess on the one hand a very complete acquaintance with the nature of the various articles of food, their physical and chemical constitution, and the normal and abnormal changes these undergo in the course of their passage through the alimentary canal, while, on the other hand, we have acquired a very precise knowledge of the altera-

tions in structure and function which take place in the digestive organs in consequence of disease. Added to this, we have also accumulated, as a result of direct clinical observation, a large amount of experience which controls and confirms the conclusions which could be deduced from physiological and pathological data. It is, therefore, to say the least, unfortunate that so little acquaintance with sound principles should characterise the advice too often given to the sick.

The absence of clear ideas on this subject places doctors at a great disadvantage in withstanding popular prejudices and predilections which are all too powerful on matters of diet, although the grounds for our practice are so simple that they can be easily explained, and are strong enough to carry conviction to the mind of any intelligent person.

Food consists of two chief parts: (1,) solid matter of animal or vegetable origin; and (2,) beverages; while we may add a third group which consists of the various condiments and stimulants which do not nourish the body, but play an important part by stimulating many of its functions, and also in some instances by irritating or otherwise disorganising its structure.

Solid food consists of starch, sugar, vegetable fibres, albumen, fat, gelatine, animal connective tissue, and inorganic salts. It is as a rule prepared by cooking, which subserves the purpose of rupturing the starch capsules and converting part of the starch into dextrines, softening and loosening the animal and vegetable fibres while it coagulates the albumen, burns some of the fat and sets free some of the fatty acids, in these last respects acting with doubtful benefit.

When it is introduced into the mouth, food is finely divided by the teeth and mixed with saliva, which coats it with a glairy covering to facilitate its passage into the stomach, and converts the starch into a dextrose sugar, the ultimate term of the process which was begun in cooking, as already described, by the change of the starch into dextrine. After reaching the stomach there is ample time for the starch-converting process to be completed before the acid of the gastric juice has combined with all the bases present in the food, and established such a degree of acidity as inhibits further diastasis. Then commences the specific action of the gastric juice which peptonises the albumens of the food, the gastric contents becoming a liquified mass consisting of dextrose, peptone, and fat, mixed with animal and vegetable connective tissue and the secretions of the mouth and stomach. This pultaceous material is called chyme, and is discharged through the pylorus into the duodenum by a mechanism which depends upon the integrity of the gastric neuro-muscular apparatus regulated by means still unexplained.

So long as this apparatus works efficiently, the stomach is promptly and thoroughly cleared of ingesta, and even if these are not completely digested the supplementary agencies of the pancreatic and intestinal juices are able to complete the process, so that no harm results. The stomach being cleared cannot become the seat of those secondary fermentative changes, which, when they happen, are fraught with so much danger to its structure and discomfort to its possessor, and which are always too apt to occur from the constant presence of numerous ferment-working micro-organisms in the food and the buccal secretions.

Want of tone, as it is called, in the muscular wall of the stomach is, therefore, a very important and early factor in stomach derangement. The author in his "Ingleby Lectures," 1894, and Dr. Meinert, of Dresden, have shown that such atony exists very commonly in various debilitated states, anæmia, etc., and thus proves the starting point for many digestive troubles. When the food lies too long in the stomach, so that fermentations can take place, fat is split up to form butyric acid, dextrose is converted into acetic acid, and these abnormal substances irritate the mucous lining and cause more or less catarrhal inflammation; gases are given off which occasion distension, and eructations of gas and acid fluid create discomfort and distress.

Under these circumstances a brisk aperient will clear out the stomach and remove all these symptoms, but if the condition recurs frequently the stomach becomes irritable, articles of food hitherto well-borne become injurious, and must be eliminated from the diet, in order to permit recovery to take place.

The facts narrated constitute a very common and typical sequence by which catarrh of the stomach is determined, but whether it be in this way or as a consequence of acute diseases, or from the abuse of alcohol or tobacco, or from catching cold, the irritated gastric mucous membrane requires to be guarded for a longer or shorter period from agents which directly or indirectly may increase or maintain its inflamed condition.

It is easy to apply the knowledge we possess for this purpose; we desire to introduce into the stomach food in sufficient quantity to supply the needs of the body, but so far limited in amount as not to tax the enfeebled muscular wall, while it must be as free as possible from substances which can act as irritants from their physical state, such as hardness or angularity, their pungency, or their proneness to undergo fermentative decomposition and give rise to acrid products. The food should therefore be soft, bland, and contain little fat, starch and sugar. To be soft it must be well cooked and finely divided, either by the teeth or otherwise; to be bland it must be free

from condiments and unmixed with alcohol, except in a very diluted form.

These principles are so simple that they appear truisms of the flattest description, yet the whole basis of dietetics consists of equally plain truths, as will be manifested in due course. Enough has been said by way of introduction, and we may now proceed to consider the diet appropriate for special diseases of the stomach.

Catarrh of the Stomach.—Catarrh of the stomach occurs under two forms : (1,) acute ; (2,) chronic.

Acute catarrh of the stomach constitutes an ordinary bilious attack and, if intense, is characterised by loss of appetite, a coated tongue, foul breath, pain after food, sour eructations, flatulence, and vomiting. If the intestine is involved there is diarrhœa, but usually the bowels are confined. The most rational treatment is abstinence from all food for twenty-four hours ; but as this is not always acceptable advice, we may give a teaspoonful of **Liebig's Extract** of meat dissolved in a teacupful of hot water, and a little piece of very dry toast every four hours, or a little beef jelly, or a little milk diluted with a third part of lime water. This rest for the stomach combined with a **Blue Pill,** a **Saline Aperient,** and **Bismuth Mixture** will work wonders.

The appetite will return. Bearing in mind the principles laid down, we shall best conform to those indications by ordering boiled or broiled sole or whiting. Eels, mackerel, and salmon are inadmissible on account of the fat they contain, and the fish must not be fried because it would then be partly soaked in fat, and some portions would be burnt. If any condiment is desired, a little lemon may be squeezed over it, and a piece of toast may be eaten with it. As a sweet, a cold baked custard or calves'-foot jelly, without wine. Aerated mineral water, with a dash of claret or a slice of lemon in it, is a suitable drink. On subsequent days boiled chicken or a boiled or stewed mutton chop free from fat may be given. If tea is begged for and things are going well it may be allowed, infused with milk instead of water. As convalescence becomes established, a little well mashed potato may be taken with the meat, and a little butter with the dry toast.

In Chronic Catarrh of the Stomach the principles are the same, but such definite rules cannot be laid down for each day's diet. It must suffice to indicate what articles of diet are likely to prove harmful.

Thus we may say, *Avoid* all condiments—peppers, spices, sauces, vinegar and pickles ; salads, and all uncooked or badly cooked fruit and vegetables ; and all containing skins, seeds, and fibres, mushrooms, onions, carrots, parsnips, turnips, gooseberries, raspberries,

and currants; brown bread and oatmeal porridge; fat, including butter; fat meats, such as pork and veal; oily fish, such as eels, mackerel, and salmon; fat poultry, such as duck and goose; strong tea; strong wines and spirits; malt liquors; much sugar or preserves.

All bread should be well toasted, and starchy and farinaceous food should be eaten sparingly.

Great stress should be laid on the caution to be exercised in taking any fruit or vegetables except such as are soft and are well cooked. Any alcohol should be well diluted, and should never be taken on an empty stomach.

Dilatation of the Stomach.—This is so often associated with catarrh that what has been already said applies with equal force, but in addition certain considerations must be borne in mind. In the first place the meals must be small in quantity and sufficiently frequent to permit the necessary amount of food to be taken; at least five meals daily, each not to exceed five or six ounces. In the second place, if there is any pyloric obstruction, the greatest care should be exercised to avoid introducing into the stomach lumps of solid food. Very little liquid should be taken with the meals, but a sufficient quantity may be drunk between the times of eating. Milk and meat in the form of dry powder, which can now be obtained, can be made into a thick gruel, and may be usefully employed in these cases. The value of saline aperients in dilated stomach should not be overlooked.

Ulcer of the Stomach.—The diagnosis of ulcer of the stomach depends upon the occurrence of hæmatemesis, and after such an attack it is advisable to stop all food by the mouth and feed *per rectum*. A nutrient enema should consist of one egg beaten up and sufficient milk to make four ounces. This may be given every four hours. If required, a drachm of brandy may be added.

It is not recommended to continue the practice of rectal feeding for many days after the hæmatemesis has stopped, and blood is no longer to be seen in the stools. Gastric ulcer is so closely dependent upon anæmia, and the indication to improve the general nutrition is so clearly imperative, that it is advisable in a few days to begin with iced milk, one ounce every hour. If this is tolerated, two ounces may be given every two hours, then in succession Benger's food, soft bread and milk, minced chicken and minced mutton, as each appears to be well borne. This diet should always be accompanied by the exhibition of **Sulphate of Iron** and **Sulphate of Magnesia,** the latter in sufficient doses to effect a daily free action of the bowels. This treatment has stood the test of many years' experience, and can be recommended with perfect confidence.

Cancer of the Stomach.—Unfortunately this disease lies so far beyond the reach of medical art that it seems scarcely worth while to say anything about diet, nothing that can be done having any influence upon the progress of the malady. But in cancer of the stomach there is generally catarrh, and, usually, deficient secretion of gastric juice, and these complications are responsible for much remediable gastric trouble. The diet in cancer should be the diet of catarrh or of dilated stomach, and it should not be forgotten that **Saline Aperients** and **Mercury** will often relieve symptoms which arise from delayed peristalsis, by clearing out the stomach.

Neuroses of the Stomach.—No special dietary is needed for this class of cases. In fact it is, as a rule, necessary to discourage the patient's tendency to diet himself, under the supposition that his troubles are due to indigestion. Rest is the great means of cure, rest to the body and mind. Where there is vomiting or anorexia rest in bed becomes essential, and the diet must be at first confined to an ounce, or even half an ounce, of milk every hour or half hour. But this scanty fare should be increased as rapidly as possible, though it is better to proceed by stages, as recommended in ulcer of the stomach, until full diet is reached.

Should habitual dyspeptics drink tea? This is a question which is generally answered by the medical profession in the negative, but the advice so conveyed is not always accepted. There is no reason for laying down a hard and fast rule on this point; it is only necessary to forbid tea during an acute attack. Afterwards it may be allowed in moderation, if its use is not followed by any obvious bad results. Where these occur it is worth while to try infusing it with milk.

The same question may be asked respecting alcohol, and needs a similar answer. A moderate amount of weak alcoholic drink is often taken without harm, and in the case of many persons with benefit. But the preferable form is light wine, diluted with water or mineral water. Malt liquors are not often tolerated, and spirits are very liable to do mischief; in fact, it is to be greatly regretted that spirits are so often taken on medical advice as the safest drink for dyspepsia. We should always bear in mind the dictum of Prout, "The error of *quantity* in diet is of infinitely more importance than the error of *quality*. Any stomach may digest a *little* of anything; but no stomach can digest a *great deal* of anything."

Synopsis.—(Vol. 1894, p. 531.) Direct **Gastro-faradization** increases secretion. **Gastro-galvanization** for obstinate neuralgias of any origin. **Nitrate of Silver** in solution, a tablespoonful of a solution ·2 to 120 in a wineglassful of water is first used three times a day, and gradually increased. The dose is taken on an empty stomach. Abstinence from food except per

rectum. Glycozone, 5ij, an hour before meals in gastric ulcer or just after meals in gastritis, or as enema. R Glycozone, 5vjss; Warm Water, 5x 5v. In cardialgia first wash out stomach, then introduce 10 or 20 grs. Bismuth Subnitrate in warm water, and patient kept quiet for half an hour, after which food may be taken. Chlorate of Soda 5ij—iv daily for gastric cancer.

STOMACH (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

The past year shows distinct progress in this branch of surgery, more especially in the treatment of perforating gastric ulcer, but also in that of stenosis and its sequel dilatation.

Before the London Clinical Society[1] we drew attention to *dilatation of the stomach as a sequel of adhesions around the pylorus*, and pointed out that by separating the adhesions the pylorus might be made to perform its functions normally again, thus relieving the dilatation. In support of the arguments two cases thus treated were described.

Gastrotomy for the removal of Foreign Bodies.—In the "Lancet" for November, 1894, we described a case in which "forty-two cast iron garden nails 1⅝ inch long, ninety-three brass and tin tacks from ½ to 1 inch long, twelve large nails, some brass-headed, three collar studs, one safety pin, and one sewing needle," were removed by gastrotomy, the patient, a girl of twelve making a complete recovery.

The value of transfusion of saline fluid in shock was pointed out, as although the operation was not very prolonged and practically no blood was lost, the patient, much exhausted by excessive vomiting before the operation was begun, was pulseless after its termination, yet transfusion restored the pulse and rendered recovery possible.

Dr. James F. Gemmel[2] also reports a case of gastrotomy for the removal of a mass of foreign bodies weighing 1 pound 9½ ounces, from the stomach of a man the subject of chronic mania. Unfortunately the patient was too feeble to withstand the shock of the operation.

Mr. Frederic Eve[3] reports a remarkable case of intestinal obstruction, perforation of the bowel, and peritonitis, due to a heterogeneous mass of foreign bodies swallowed from time to time by the patient.

At the post mortem examination the stomach was found to be empty and the mucous membrane very slightly altered, save for a little ecchymosis at the cardiac end.

The interesting point in this case lies in the fact that the mucous membrane of the stomach was apparently uninjured by the foreign bodies which afterwards perforated the intestines.

An important and interesting discussion was opened by Mr. Pearce

Gould,[4] at the British Medical Association's Meeting, at Bristol, and in discussing the operative treatment of ulcer of the stomach he remarked that laparotomy for the purpose of excising a non-perforated gastric ulcer had little to recommend it, inasmuch as the site of the ulcer cannot be ascertained before operation, and in a large proportion of cases the symptoms before perforation are either entirely absent or so slight as not to warrant a diagnosis of ulcer.

After perforation, the operation should not be done while the patient is suffering from the primary shock, but as soon as reaction has set in. The primary incision should be in the middle line, as this gives the best access to the whole abdomen ; a lateral cut, or an extension of the first incision, may be made if required.

The cleansing of the peritoneum is the most important step of the operation ; for this purpose Mr. Gould considers flushing the cavity with saline solution 5j of common salt to the pint of boiled water, at a temperature of 110° to 112° F. to be the best plan. The flushing must be thoroughly and methodically carried out. The hole in the stomach should be closed by Lembert's sutures, passed so as to invert the floor of the ulcer and a part of the surrounding walls. Excision of the ulcer is not recommended. If found impossible to invert the ulcer a gastric fistula may be made ; or when the perforation is so placed as to make this impossible, drainage by a tube passed into the ulcer and surrounded by an iodoform gauze tamponade is suggested. Drainage by tube inserted through a separate wound above the pubes is necessary in all cases where peritonitis is marked. When doubtful of the gastric sutures, a large drainage tube should be inserted with one end near the ulcer. If the hot irrigation does not remove the collapse, intravenous injection of a saline solution may be practised.

Seven successful cases of operation for this condition are referred to.

On the subject of subphrenic abscess, Mr. Gould makes two comments :—

(1,) Operation should be postponed until the abscess can be distinctly localised.

(2), Many of these abscesses point and are opened anteriorly, but in all such cases a free posterior opening should be made if practicable.

In the discussion that followed, Dr. Roderick McLaren mentioned a successful case of operation occurring in his practice.

Mr. Hastings Gilford[5] in recording a case of perforated gastric ulcer successfully treated by operation, considers it advisable to excise the margins of the perforation before passing the sutures.

Mr. Bourchier Nicholson[6] records a case of ruptured gastric ulcer

successfully treated by laparotomy, suture by Lembert's method, lavage, and drainage. Operation was performed three hours after the rupture had occurred.

Mr. Thomas H. Morse[7] also records a similar case successfully operated on five hours after rupture.

Mr. Frederic Eve[8] describes a case of perforation of gastric ulcer situated on the anterior wall of the stomach in which the patient was able to perform her duties (those of a domestic servant) for more than twenty-four hours after the event.

Mr. Bennett[9] records a case of complete recovery after operation for sub-phrenic pneumothorax due to perforation of gastric ulcer. The abdominal lesion was treated as an ordinary abscess, without any attempt at closing or even exposing the gastric perforation. The issue of the case shows that a perforation of the stomach will, in these subacute cases, when it communicates with a well-circumscribed cavity, heal spontaneously if the cavity be drained.

Mr. Herbert Page[10] in reporting two unsuccessful cases of operation for ruptured gastric ulcer remarks that the chances of success must largely depend on the good fortune which attends the surgeon as to the lesions he may find, and the time at which he has been called to operate.

Dr. F. N. Kelynack[11] says that many anomalous cases of sudden illness with acute abdominal symptoms rapidly terminating fatally, even before the subject can be brought to hospital, or receive adequate medical assistance, are due to perforation of chronic gastric or duodenal ulcer.

In a series of one hundred and fifty-seven deaths from acute peritonitis occurring in the Royal Infirmary, Manchester, six were cases of perforation of gastric ulcer, and six of duodenal ulcer.

Kelynack draws attention to the fact that the perforation is often very small and may be with great difficulty detected even after death. Gaseous injection through the œsophagus may prove of service in discovering the perforation in such cases.

Rupture of Stomach.—Brig.-Surgeon Lieut.-Col. O'Farrell[12] records a case of sudden death of an apparently healthy boy, aged thirteen, from convulsions following rupture of the stomach.

The whole illness only lasted twenty-two hours, and until an hour before death the only symptoms were headache and slight vomiting. An hour before death he was seized with most violent convulsions. Post mortem a rent three inches long was found in the inflamed tissues at the back of the stomach.

Küster[13] records a case of successful operative interference for pro-

fuse and repeated bleeding from an ulcer of the stomach. Laparotomy, incision of the dilated stomach, and cauterisation with the thermo-cautery of a large and deep ulcer near the pylorus was practised. Gastro-jejunostomy was then performed.

Dunin[14] is of opinion that in obstinate recurrent hæmorrhage due to ulcer gastro-enterostomy may be useful, even in the absence of stenosis. The passage of the food by another route than the pylorus, which is the favourite seat of ulcer, and perhaps the diminished acidity of the gastric juice would be beneficial.

E. Hahn[15] has lately performed fifteen gastro-enterostomies and four resections of the stomach. All the former survived, but of the latter one died, a most extensive resection having been done. The author has also operated on a woman with severe and long continued pain in the region of the stomach. Five strong adhesions between the stomach and colon were divided, and the patient was well afterwards.

Hahn records a case of pylorectomy for carcinoma, peformed in July, 1893. The patient returned in eight months with signs of pyloric obstruction, and numerous adhesions were then divided. He seemed to improve, but it was soon found necessary to do a gastro-enterostomy. The patient died some six months later, of recurrence.

The author also records a case of pylorectomy for extensive carcinoma (proved by the microscope), done three years and a half ago, the patient remaining free from recurrence.

In cases of extensive resection of the stomach it is undesirable to attempt to unite the stomach and duodenum, but a gastro-jejunostomy should be done after sewing up the stomach and duodenum. The author no longer uses his clamps, as they may produce gangrene, and make the later bleeding more difficult to control. He makes the opening in the stomach in gastro-enterostomy as near the pylorus as can wisely be done. The intestine should be opened near the attachment of the mesentery. Hahn regards as very important the washing out the stomach soon after the operation, that is, in twelve to twenty-four hours. He refers to a case in which gastro-enterostomy was done some seven years before death, due to independent causes. The tumour was thought to be carcinoma, but unfortunately no necropsy was performed. He recommends Woelffler's method of gastro-enterostomy, with a few modifications.

In the "International Clinics," 1894, we described the operation of gastro-enterostomy by the decalcified bone bobbin, and illustrated the paper by cases We remarked on the expedition, the simplicity, the safety, and the efficiency of this method which secures continuity

of mucous membrane through the new opening, and thus avoids the danger of stenosis of the fistula.

William S. Magill[16] in advocating the use of absorbable plates in visceral approximation says: "Forty-seven patients survived the operation of gastro-enterostomy with absorbable plates, a percentage of 77·05. Twenty of these patients are noted at various times as well, and no indication of their death can be found."

Pylorectomy has been performed three times with the aid of approximation plates, by three different surgeons: one died, the other two are still living. The rapidity of plate approximation makes a different operation of pylorectomy than when it was performed with sutures.

Dr. Murphy claims great advantage by the use of his button, both in gastro-enterostomy and in pylorectomy. In the latter operation the button is placed in the cut end of the duodenum and in a new opening on the posterior wall of the stomach, the pyloric incision being closed by sutures.

Levy[17] describes an operation devised by him, with the help of Fehleisen, for the resection of the cardiac end of the stomach. A rectangular incision is made through the abdominal wall, one limb running in the middle line from the ensiform appendage to the umbilicus, the other carried from the lower end of this through the whole breadth of the rectus muscle on the right side. The left half of the smaller omentum is separated from the stomach, and the left coronary artery and vein are divided between two ligatures. After separation of the cardiac end of the stomach from the structures behind, the lower part of the œsophagus is isolated by dividing the serous membrane round this tube with scissors, exposing the anterior part of the œsophageal foramen in the diaphragm, and tying all visible vessels, mostly branches of the phrenic artery, at this part. At this stage there is a risk of wounding the pleura. The intestine being carefully protected by gauze, the posterior wall of the œsophagus beyond the disease is stitched to a healthy portion of the stomach, and then the cardiac end of the stomach is divided by a succession of strokes, the cut edges of the anterior and posterior walls being stitched together after each stroke of the knife or scissors beyond the orifice left for the attachment of the œsophagus. This tube is now divided in a similar way, each portion as it is cut being stitched to the opening in the stomach. If the œsophagus be not fixed before it is completely divided, it will retract and disappear above the foramen. The sutures are not carried parallel with the long axis of the œsophagus, but obliquely through its coats.

Zawadzki and Solman[18] report a successful case of resection of

pyloric cancer, and draw attention to the degree of dilatation of the stomach. In great dilatation a gastro-enterostomy at the lowest point should be performed, inasmuch as the food could hardly get through the new opening formed by pyloroplasty.

At the November meeting of the Yorkshire branch of the British Medical Association Mr. Jessop reported the case of a woman in good health, from whom he had removed, by pylorectomy, a cancer of the pylorus three years before.

Ziegler[19] relates a rare case of cyst, of the anterior stomach wall, appearing two weeks after a buffer accident. Five months later laparotomy was performed and the large peritoneum-covered cyst evacuated of three litres of fluid. The patient recovered completely.

Brandt[20] proposes to diminish the size of the dilated stomach of idiopathic origin, by folding in its wall and suturing it through the serous and muscular layers. He reports one case in which this procedure was carried out. The patient made a good recovery without any disturbance of digestion.

Mr. J. Hazelwood Clayton[21] describes a case of abdominal injury, due to a crush, in which at post mortem the mucous membrane of the stomach was found ruptured on the anterior and posterior wall without appreciable injury to the other coats.

REFERENCES.—[1] Clin. Soc. Trans., 1894; [2] "Lancet," Aug. 25, 1894; [3] "Brit. Med. Journ.," May 5, 1894; [4] Ibid., October 20, 1894; [5] "Lancet," June 2, 1894; [6] "Brit. Med. Journ.," Nov. 3, 1894; [7] "Lancet," March 17, 1894; [8] Ibid., Nov. 10, 1894; [9] Ibid., Nov. 17, 1894; [10] Ibid., March 24, 1894; [11] "Brit. Med. Journ.," Oct. 27, 1894; [12] "Lancet," May 19, 1894; [13] "Centralblatt. f. Chir.," No. 30, 1894; [14] "Berlin. klin. Woch.," Jan. 15 and 22, 1894; [15] "Brit. Med. Journ.," Nov. 17, 1894; [16] "Annals of Surgery," Sept., 1894; [17] "Centralblatt. f. Chir.," No. 31, 1894; [18] "Deut. Med. Woch.," Feb. 22, 1894; [19] "Münch. Med. Woch.," Feb. 6, 1894; [20] "Centralblatt. fur. Chirurgie," Nov. 16, 1894; [21] "Brit. Med. Journ.," March 24, 1894

SYCOSIS.

Synopsis.—(Vol. 1894, p. 533.) Rubbing with **Absolute Alcohol**. Opening pustules and touching them with absolute alcohol with or without **Boric Acid**. Lastly, painting with a solution of **Essence of Cinnamon**, ℥ij, **Sweet Oil of Almonds**, ℥ij—iij. Pain may be relieved by **Marsh Mallow** and **Boric Acid Spray**. Stelwagon advises **Shaving, Depilation** and application of: ℞ Sulph. Præcip., ℥j; Bals. Peruv., ℥ss; Ung. Diachyli ad ℥j; M. Ichthyol, ℥j—℥j may be added. Gottheil after epilation applies: ℞ Tinct. Opii, ℥ss—℥j; Ac. Carbol. Cryst., gr. vij; Cold Cream, ℥j. For acute inflammation he uses: ℞ Ung. Diachyli; Ung. Zinc. Ox. āā ℥ss, or: ℞ Hydrarg. Ammoniat, ℥ss; Vaseline ad ℥j; or later: ℞ Ichthyol, ℥ss; Lanolin ad ℥j; Klotz uses a 2% ointment of β-Naphthol with 10% Sulphur and Oxide of Zinc. Leigh uses **Pyoktanin**, 1 in 500 solution, or ointment with **Vaseline**. **Cataphoresis**.

TATTOO MARKS. *T. Colcott Fox, M.B.*

Ohmann-Dumesnil and Nelson have reported cases of tattooing and gunpowder disfigurements which have been successfully dealt with by tattooing the parts with **Glycerole of Papoid.**

TEETH (Pyorrhœa Alveolaris). *J. Fitzgerald, L.D.S.*

Pyorrhœa alveolaris, or Rigg's disease, is a term applied to a diseased condition which is characterised by the presence of pus between the edges of the gums and the necks of the teeth. On pressing the edges of the gums, pus is seen to well up alongside the teeth.

This condition, usually overlooked or unrecognized by the practitioner of medicine, is, nevertheless, of great importance, as modern pathology teaches us that upon it depend in many cases, not only local troubles of the mouth, but also disturbances of the whole system, and particularly of the digestive organs. The tendency of modern medicine is not to rest satisfied with the diagnosis of "debility," or "anæmia," but to try and search out the initial cause for these conditions, and in an unrecognized pyorrhœa alveolaris, we may, I venture to assert, often find a clue to the elucidation of certain departures from health which have baffled our powers of investigation.

Pyorrhœa alveolaris acts in a two-fold manner in the causation of disease. *First*, the pus with its multitude of putrefactive organisms may be swallowed. *Secondly*, it may be absorbed into the system.

In the former case, abnormal fermentations may be set up in the stomach contents. Just as the introduction of the yeast ferment into a trough of warm dough leavens the whole mass, so the mixture of the bacilli of fermentation, swallowed with every mouthful of food, induces rapid changes in the stomach contents, subjectively experienced by the patient as flatulent dyspepsia.

In the latter case, the continual absorption of pus or its toxines into the system is now known to be a fertile source of neuritis and neurasthenia. It is evident, therefore, that the subject should receive the attention of the practitioner, and that he should be able to diagnose and treat cases which may come under his notice, and by thus *eliminating the condition of the teeth and gums as a possible cause of the malady* for which he has been consulted, arrive at the true cause of the complaint. I shall, therefore, in this short paper, attempt to point out the main facts, and thus supply a working knowledge of a subject, which, although of such importance, is not included in the curriculum of the student of general medicine.

The condition of pyorrhœa alveolaris is an accompaniment of several

distinct diseases which must be accurately differentiated as their treatment differs. We shall describe these in order of severity. Before doing so, however, it will be as well to remind our readers briefly of the structure and functions of the *gingivæ*, or gum margins (see *Fig.* 35).

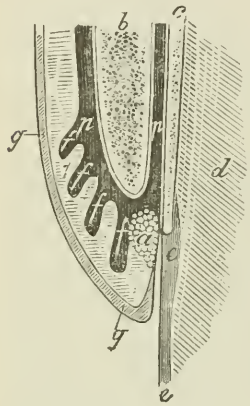


Fig. 35.—Diagram of Structure of the Gingival Border and Subjacent Parts. *a*, Gingival organ; *b*, Bone; *c*, Cementum; *d*, Dentine; *e*, Enamel; *f*, Papillary projections of fibrous tissue covering periosteum; *g*, Squamous epithelium; *p*, Peridental membrane.

The free margin of the gum is covered on its exposed surface by a very dense squamous epithelium, which is necessary to enable it to withstand the abrading action of food during the act of mastication. Under this lies a layer of softer epithelial cells covering a series of papillary projections from the subjacent fibrous tissue. This composite structure is firmly attached to the neck of the tooth and the periosteum of the alveolar wall by the dental ligament, which consists of radiating bundles of fibrous tissue. This attachment of the gum to the tooth varies from one-eight to three-eights of an inch from the free margin of the gum. The epithelium that covers the inner surface of the gum margin, *i.e.*, that portion in contact with the neck of the tooth, consists of very soft round or polygonal cells, and is of considerable depth. Although not of glandular structure, it secretes a profusion of small rounded cells which are to be found in abundance in the saliva, and are usually called *mucous corpuscles*. For this reason, it has been termed the gingival organ. It is probable that this structure is not the sole source of the mucous cells in the saliva, but it will certainly account for many of them. This can easily be proved by passing the end of a thin instrument under the free margin of a healthy gum, and transferring the secretion to a slide for microscopic examination. The knowledge of this organ and its secretion is of the greatest importance to the physician, as the accumulation of these cells mixed with organisms under the free margin of the gum forms soft cheesy masses that so nearly resemble pus that they may be easily mistaken for it, and thus lead the observer to make an erroneous diagnosis of pyorrhœa alveolaris. With these preliminary remarks, we will proceed to the consideration of the conditions or morbid states which are accompanied by true pyorrhœa.

These are: (1,) Gingivitis; (2,) Calcic inflammation of the peridental membrane; and (3,) Phagedænic pericementitis.

Gingivitis.—It appears to be now quite certain that the gingival organs possess, in common with certain glands of the body, the power of selecting and excreting certain poisonous matters from the blood, and that certain of these substances, if in any considerable quantity, cause hyperæmia, or even inflammation in their passage. We have notable examples of this in the inflammation of the gums caused by *mercury*, and *iodide of potassium*, respectively. Although each of these is a true gingivitis, yet owing to the salivary glands being at the same time affected, it is usually spoken of as "salivation." A form of gingivitis is met with in scurvy, and another form frequently attacks young people, and is of importance insomuch as it often accompanies anæmia and rheumatoid arthritis, and not improbably acts as a factor in their causation.

In this last form of gingivitis the gums become red and swollen, and bleed from trifling causes. They are everted, and the pockets thus formed are filled with pus corpuscles and the micro-organisms of the mouth. The inflammation does not assume a destructive character, and there is little or no separation of the tissues from the necks of the teeth. Although simple gingivitis is usually transient, lasting but a few weeks, yet it is undoubtedly in some cases the starting point of graver diseases of the peridental membranes.

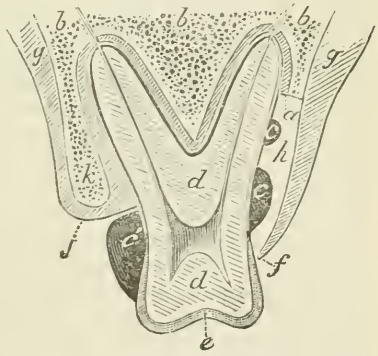


Fig. 36.—Diagram of Tooth with Calcic Inflammation and Phagedænic Pericementitis. *a*, Edge of alveolar process and peridental membrane destroyed, and forming the apex of a pocket. *b*, Bone; *c*, Serumal calculus; *c'*, Salivary calculus; *d*, Dentine; *e*, Enamel; *f*, Free edge of gum; *g*, Gum; *h*, Pocket; *j*, Eroded and recessed edge of gum; *k*, Alveolar process.

Calcic Inflammation of the Peridental Membrane and Gums.—This condition may be defined as inflammation of the gums set up and perpetuated by the irritation of tartar on the teeth (see *Fig.* 36).

Of this there are two distinct varieties:—

(1,) When the tartar is hidden from sight, being on the necks of the teeth below the edge of the gums; and

(2,) When it encrusts the buccal, labial, and lingual surfaces of the teeth above the level of the edge of the gum, particularly the buccal

surfaces of the upper molars and the lingual surfaces of the lower incisors.

In the case where the tartar is deposited below the edges of the gums it is either in the form of a hard brownish crust, or as little nodules adhering very firmly to the neck of the tooth ; it is deposited from the serum which exudes from diseased gums, and is caused by anything that will irritate the gums, and may be initiated by :—

(1,) Accumulations of micro-organisms or food, under the edges of the gums.

(2,) Constitutional causes leading to irritation of the gums.

(3,) Irritation from a neighbouring deposit of ordinary salivary calculus.

After tartar has once been deposited upon the neck of a tooth, a vicious circle is established which is very hard to break. When a slight deposit has once taken place it becomes an irritant which will itself perpetuate the disease ; in fact all varieties of tartar seem to possess irritating qualities of an extreme nature, which keep the border of the peridental membrane and the adjacent gum in a continual state of chronic inflammation, with the result of a continued, slow increase of the deposit. The course of the disease from this point is as follows : After a longer or shorter period, the lower border of the peridental membrane ulcerates, and is gradually destroyed and the neck of the tooth becomes exposed. *Pari passu* with this destruction of the peridental membrane, the edge of the bony socket of the tooth is absorbed and the gum recedes with it, exposing to view the band of tartar surrounding the neck of the tooth. This variety of calculus is called "*serumal.*"

In cases where the tartar is deposited above the edges of the gums, the so-called "*salivary calculus,*" the diseased conditions produced are very similar to those already discribed, but the deposit is more abundant on the teeth in the vicinity of the orifices of the ducts of the salivary glands, as the tartar is deposited by the salivary fluid. The deposit commencing on the lingual surfaces of the lower incisors, and on the buccal surfaces of the upper molars gradually creeps in between the teeth, and passing from tooth to tooth, eventually involves all of them. This kind of calculus is sometimes dark, but usually of a light yellow colour ; it is softer than the sub-gingival variety, is deposited in larger quantity, and is much more destructive in its effects. No tissue retains its health if in contact with salivary calculus. It is continually on the aggressive, and follows up its destructive effects by fresh deposits in the space gained. In this way teeth are loosened very rapidly.

Phagedænic Pericementitis.—The third and last condition of which pyorrhœa may be a symptom, but, unfortunately, the most serious of them all, is *Phagedænic pericementitis*, or destructive inflammation of the peridental membrane.

It is not known for certain whether this disease is of bacillary origin, but the probabilities in favour of this view are preponderating. As to its ætiology the following facts are known :—

(1,) It is certainly infectious. It can be carried from person to person by the medium of instruments, and one tooth may infect an adjacent one.

(2,) It is in no wise hereditary, as is the disposition to the deposit of tartar.

(3,) Deposits of calculus predispose the patient to contract it.

(4,) It can only be cured by the complete removal of the diseased tissue.

This disease is an inflammation of a special type, which attacks the peridental membrane, and destroys it bit by bit, the destruction of the alveolar walls taking place at the same time. The inflammation may be either acute or chronic, and during its progress the membrane first becomes swollen, owing to the infiltration of leucocytes among its individual fibres, which themselves are lengthened and enlarged. These fibres seem to actually melt down and separate themselves from the root of the tooth, but retain their hold upon the alveolar wall until quite destroyed.

For a long time the gums are unaffected beyond a slight reddening of their margins, and the presence of the disease is only suspected by finding that pus exudes from beneath the gum when pressure is applied to it. After a time, a careful examination with a thin blunt flat blade will show that destruction of the peridental membrane is taking place, as the instrument will pass up further than it should along the side of the tooth, into a little pocket which has already formed, and contains pus. These pockets are the characteristic feature of the disease. They follow the length of the fibres of the peridental membrane, run up alongside the root of the tooth, may be single or multiple, and may attack the lingual, buccal, or proximal sides of the teeth. The tendency is eventually to the destruction of the whole peridental membrane as the pockets slowly widen, usually irregularly, until they encircle the teeth. It not unfrequently happens that the entire apex of the root is denuded, whilst the tooth is held in its place by a strip of membrane on the other side, which has, as yet undergone little change. All this time the gums may show no signs of disease externally, beyond a certain amount of injection, and there may be little or

no recession. At the same time that these changes are taking place in the membrane, absorption of the alveolar wall is going on. In some cases, whilst the inner portion of the alveolar wall is being destroyed, deposit of new bone is taking place on its outer surface. The result of this is that the alveolar wall becomes lipped, and by its everted edge holds away the gum from the tooth. The destruction of bone appears to be a process of true absorption, rather than molecular necrosis, and is the result of an absorptive action of the membrane itself, caused by the irritation of inflammation.

We now come to the consideration of a class of cases in which the two diseases (calcic inflammation, and pericementitis) are combined. It is exceedingly common to find calcic inflammation from the deposit of calculus and phagedænic pericementitis further up towards the apex of the root of the tooth.

For purposes of diagnosis, I will divide all cases of pyorrhœa into two groups :—

(1,) Where there is visible salivary calculus or recession of gum and exposure of the roots of the teeth.

Here, in addition to the diagnosis which is obvious, and we are enabled to make at sight, we have to establish chiefly whether there is present pericementitis, or whether the calculus is the sole exciting cause. Where there is no absorption of the gum, we have to find out whether a serumal calculus exists in addition to the salivary one that we can see. Our prognosis will be much more favourable if we have only a salivary calculus to deal with.

The first thing to do is to remove the salivary calculus entirely. Search must next be made beneath the gum for serumal calculus, then see if any pockets are present in the peridental membrane. If no pockets are detected, and we find when the last of the salivary calculus has been removed, the peridental membrane is intact all round, and attached to the root of the tooth, the operator is justified in assuming that there are no points where the peridental membrane has been destroyed much further than the calculus has extended. If such is the case, he may assume the absence of phagedænic pericementitis.

If on the other hand, when the calculus has all been removed, he finds that the membrane has been destroyed, it points much further than the calculus has extended on the root of the tooth, and that the wall of the alveolus, instead of being destroyed as a whole, has been eaten away somewhat in the form of a fissure, extending to the apex of the tooth, leaving angular prominences of bone, thickened, with everted edges, he may conclude that the salivary calculus is complicated with the more serious disease.

(2,) In the second class of case which presents itself for diagnosis, we can see nothing wrong with the gums, except, perhaps, a slight sponginess and congestion, and the pus which wells up alongside the teeth when pressure is made.

Salivary calculus is here excluded, and the disease may possibly be either simple gingivitis, serumal calculus, pericementitis, or the combination of the latter two.

Excluding tartar and pockets, the case will be one of *simple gingivitis*. Tarter under the gum without pockets will be *calcic inflammation*, pure and simple. The presence of pockets will indicate, as in the case of salivary calculus, the presence of *phagedænic pericementitis*.

In order to ascertain whether subgingival calculus be present, instrumentation should be resorted to.

TREATMENT.—The treatment of pyorrhœa alveolaris is of great importance to the general practitioner, and deserves his consideration for the following reasons :—

(1,) With a little practice and a few simple instruments he can treat this condition quite as well as a dentist.

(2,) In country districts *efficient* dental aid cannot always be obtained.

(3,) It is illogical for him to try to cure a patient of such diseases as rheumatoid arthritis, or dyspepsia, which may possibly be caused by continual absorption of small quantities of pus, as long as pyorrhœa alveolaris is allowed to remain untreated.

(4,) Patients in poor circumstances often cannot afford to place themselves in the hands of a competent dental surgeon, and it is hard that therefore they should be doomed to remain uncured of their dyspepsia.

(5,) There is no reason why a purely surgical disease of the gums, which must be cured by purely surgical means, should be considered to be outside the province of a surgeon.

Simple Gingivitis.—This presents no difficulty. If not due to mercury or iodide, a brisk purge followed by vegetable acids will usually do a great deal towards restoring the patient to health. As a means of administering the latter, nothing is better than the free use of oranges and lemons, as they also have the advantange of acting locally upon the parts themselves. At the same time an antiseptic should be used night and morning ; for this purpose nothing is better than **Listerine,** a few drops of which may be poured upon the tooth brush. In obstinate cases we must pack powdered **Sulphate of Copper** down under the edges of the gums with a wooden point

for several days in succession, and then give the patient the following mouth-wash :—

℞	Potassæ Chloratis	ʒij	Tinct. Arnicæ	ʒij
	Sodæ Biboratis	ʒj	Aquæ Rosæ	ad ʒviij
	Potassæ Nitratis	ʒss		

Misce.

Calcic Inflammation.—In the treatment of calcic inflammation, first of all remove every vestige of tartar, both salivary and serumal. This is quite an easy operation if performed with a knowledge of the right method, and with proper instruments.

The necessary instruments are the following :—

(1,) Two or three crooked or hoe-shaped instruments of various sizes for the removal of the bulk of the large concretions of salivary calculus, by a pulling motion, and a set of Howe's scalers for removing remaining portions, to be used in a similar manner.

Fig. 37.—*a*, Scaler; *b*, Calculus; ↓, Direction of pressure.

(2,) A set of Cushing's scalers for removing with a *pushing* motion the last particles of salivary calculus and serumal calculi, and for probing for pockets.

(3,) A hypodermic syringe, with a special cannula for the application of medicated solutions to the peridental membrane.

(4,) A properly shaped wooden point for packing sulphate of copper under the margin of the gum.

The proper way of removing a calculus is to apply the chisel edge of the scaler to the point where it joins the tooth, and gently press. The calculus will then start right off the tooth (see *Fig.* 37).

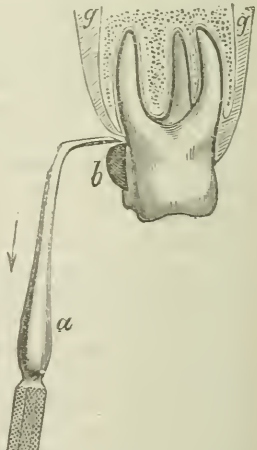


Fig. 38—*a*, Scaler; *b*, Calculus; † Direction of pressure.

In removing a large salivary calculus, the hoe-shaped end of the hooked instrument must be passed under the calculus where it touches the gum, and the instrument pulled towards the crown of the tooth (see *Fig.* 38).

The greater part of the tartar can be removed without any difficulty by the novice, but the difficulty commences with the removal of the last small scales. A careful search must be made for these, up under the edges of the gum, as a small particle overlooked will certainly keep up the irritation and prevent healing. If, in any case, you have excluded pericementitis, and healing does not promptly follow removal of the tartar, you may be quite sure that some of it has been left behind.

After the removal of the deposits, **Peroxide of Hydrogen Solution** should be syringed up under the gums, and the patient told to report himself in a week.

The following are eligible formulæ for these :—

℞	Acidi Glyc. Carbolici	ʒiv	Sodæ Biboratis	ʒj
	Acidi Tannici	ʒj	Aquæ Rosæ	ad ʒviij
	Potassæ Chloratis	ʒij		

Misce.

Powder.

℞	Cretæ Precip.	ʒiv	Ol. Eucalyptis	ʒss
	Pulv. Radicis Iridis	ʒiij	Otto Rosæ	mvij
	Pulv. Saponis Albi	ʒvj		

Misce.

If the tissues are found to be turgid and thickened, and in a state of active inflammation, a 20 per cent. solution of **Chloride of Zinc** should be applied with the syringe under the edge of the gums.

If there is much destruction of tissue, the patient should attend every four days, and have the following remedy applied with a brush to the parts :—

℞	Ol Cinnamomi	ʒiv	Acid Carbolic (Xtals)	ʒj
	Ol. Gaultheriæ	ʒiv		

Misce.

I should here like to make my protest against the practice which is too prevalent among dental surgeons, of removing with a chisel the lower margin of the alveolar process and peridental membrane in all cases where there is recession of gum and absorptions of the process. This proceeding is only called for in phagedænic pericementitis, and is quite superfluous in the treatment of calcic inflammation.

Phagedænic Pericementitis.—The surgeon should remove all calculi, and examine the alveolar processes and eroded portions for roughened or everted margins. All eversions of the alveolar wall must be cut off, all jagged points of bone removed, all thick edges trimmed down or broken away. The method of doing this will vary greatly with each

case. When the destruction has not been very great, and the parts can be easily reached, a hoe-shaped excavator with a broad cutting edge may be introduced between the gum and the tooth, and the margin of the alveolar wall cut away until the bone is felt to become firm and resistant to the cutting edge of the instrument. The greatest care must be taken not to injure the gingival margin. In all cases the cutting of the alveolar walls should be done in such a way that the soft tissues will be against the root of the tooth.

In all cases, whether tartar or bone has been removed or not, wash out with the syringe all the pockets with a solution of peroxide of hydrogen, containing 1 gr. of perchloride of mercury to the ounce. Then syringe in a solution of 30 per cent. of chloride of zinc. Repeat these two applications every day for a week. First the washing with peroxide, then the chloride. You now direct the patient to come every four days, and on each occasion syringe the pockets with peroxide as before, but instead of the chloride of zinc, introduce with a brush a few drops of the cinnamon, gaultheria and carbolic mixture, the formula of which has been already given.

At the same time the patient may be given this same prescription diluted with an equal quantity of oil of lemons, to be applied to the gums once a day with a brush. As a mouth wash, he may use the simple cinnamon water.

Before closing this paper, I should like to again impress upon my readers the necessity of distinguishing between calcic inflammation, and phagedænic pericementitis, as the appropriate surgical treatment of the latter is hurtful to the former, and that of the former quite inadequate to cure the more serious disease.

TESTICLE (Strangulation of). *E. Hurry Fenwick, F.R.C.S. Strangulation of the Testicle by Rotation. Torsion of the Spermatic Cord*[1].—This accident, of which so little has been written, is held responsible for many of the atrophic testicles. Lauenstein (Hamburgh), states that by a torsion of 180° which is usually the result of an accident, so great a circulatory disturbance is created, that changes in the tissue of the testicle are brought about which very closely resemble the hæmorrhagic infarctions of the intestine caused by emboli in the arteria mesaraica.

The clinical features of the cases which are on record, eleven in number, are almost identical. The onset was usually very sudden and mostly due to some unusual exertion or violent wrench of the body. The symptoms resembled those of strangulated hernia ; in fact, in some of the cases this diagnosis was made. Vomiting and great pain in the testicle and groin were followed rapidly by swelling of the

organ (œdema, and redness) and constitutional disturbance. The testicle presented the same features in all the cases which were operated on.

The testicle was shiny, darkly discoloured, more or less swollen, and surrounded by yellow or bloody fluid. The hæmorrhagic infarction was undoubtedly due to the twisting of the cord.

Bryant records a typical instance. A boy of fifteen had an incompletely descended testis of the left side. At first the symptoms resembled strangulated hernia, and he was at once operated on. The testicle was found almost black, and the spermatic cord was seen to be twisted upon its axis one and a quarter times. It was easily untwisted, and as it remained warm the operator decided to leave it. A rapid atrophy was the result.

The treatment for the condition, if diagnosed early, within an hour or two of the accident, is to attempt to untwist the testicle by manipulation.

It may be worth while to remember the fact that in five cases of right-sided inguinal testicle a *left* spiral twisting of the cord had taken place. This is similar (says Lauenstein) to the observation of Küstner, that right-sided ovarian tumours tend to undergo a left spiral torsion of the pedicle, and ovarian tumours of the left side tend to undergo a right spiral torsion. If the case is seen when inflammatory symptoms have ensued, immediate castration is probably the best course.

REFERENCES.—[1] "Annals of Surgery," July, 1894.

TETANUS.

Synopsis.—Vol. 1894, p. 538.) Injection of Tizzoni's Antitoxin.

THROAT (Disease of).

Synopsis.—(Vol. 1894, p. 539.) Large doses of Potassium Iodide may relieve pain of carcinoma.

TINEA TRICHOPHYTINA (Of the Scalp). *T. Colcott Fox, M.B.*

Du Castel,[1] has put the curative powers of **Chrysarobin** to the test in two hundred and fifty cases of ringworm, and, commencing with weak preparations to study the degree of tolerance of the patients, he has employed successively unguents more and more concentrated. *e.g.* :—

℞ Chrysarobin	10 grammes	
Acid Salicylici		Ung. Styracis
Ichthyol	āā 5 grammes	Ung. Simplicis āā 50 grammes
or ℞ Chrysarobin	20 grammes	Ichthyol āā 5 grammes
Acid Salicylici		Ung. Styracis 100 grammes
or ℞ Chrysarobin	25 grammes	Ung. Styracis 100 grammes

The layer of unguent was covered with a layer of collodion flexile, or of antiseptic plaster. He has also tried to make its action more energetic by applying a continuous current going to a strength of about 12 milliampères and lasting ten minutes. Whereas Unna cured his cases in a few weeks, showing the far less rebellious character of the Hamburg ringworm, Du Castel gives a table recording the fact that four to seven months elapsed in the great majority of his cases before a cure resulted.

Abraham, in the "Lancet," figures his apparatus made by Arnold and Sons, for the *introduction of fluids into the skin under pressure.* He epilates as many diseased hairs as possible, and shaves the scalp. He then washes the scalp with soft soap and warm water, then with alcohol, and lastly with ether to remove fatty matter and *débris.* Applications of pure **Creasote** are made with the special apparatus every second or third day, and meanwhile the scalp should be kept inuncted with an antiparasiticide, *e.g.*, **Carbolic Acid, Salicylic Acid,** of each ʒss to j in ʒj of **Lanoline Ointment** or **Vaseline.**

Noir[2] has adopted a treatment by **Hot Antiseptic Solutions.** He cuts the hair close and scrubs the patch of ringworm of the scalp with soft soap and water. Gauze soaked in a 1 in 2000 solution (at 50° C.) of corrosive sublimate is then applied and covered with oil silk and a gauze bandage. The soaping and dressing are renewed daily.

REFERENCES.—[1] "Annales de Derm. et de Syph." p. 998, 1894; [2] "Progrés. Méd."

Synopsis.—(Vol. 1894, p. 543.) **Shaving, Washing with Antiseptic Soap.** Curetting diseased patches after **Freezing with Ethyl Chloride.** Then applying: ℞ Hydrarg. Iodid. Rub., gr. jss; Hydrarg. Perchlor., gr. ix; Sp. Vin. Rect., ʒj; Solve et adde Aq. Dest., ʒv; M. Ft. Lot. After a time apply: ℞ Hydrarg. Perchlor., gr. ix; Hydrarg. Iodid. Rub., gr. jss; Emplast. Simplicis., ʒv; Ft. Emplast. **Iodized Collodion** painted on till crust forms, which is torn off and the part washed with **Hydrarg. Perchlor. Solution,** 1 in 500. ℞ Alcohol at 95°, 12 grms.; Metallic Iodine, 0·75 grms.; Venice Turpentine, 1·50 grms.; Castor Oil, 2·75 grms.; Dissolve and add Collodion, 35 grms.; or: ℞ Alcohol at 95°, 5 grms.; Ether, 5 grms.; Metallic Iodine, 0·50 grms.; Collodion, 30 grms. **Introdermic injections** of watery or alcoholic solution of **Acid Sublimate** (sublimate and tartaric acid 0·01 to 30 grms of water). **Losophan,** 1—2% solution in alcohol and water. Shaving, washing and application of compresses of **Corrosive Sublimate,** 1 in 2000 at about 122° Fh. **Croton Oil, Oleate of Copper.** Epilatory method by tearing off a dried layer of **Salicylic Acid in Collodion. Chrysarobin.**

TINEA VERSICOLOR.

T. Colcott Fox, M.B.

In a discussion on the bactericidal properties of **Losophan** at the Nuremberg Congress, 1893, Behrend said the treatments in vogue for pityriasis versicolor gave only temporary favourable results, because

very pale patches escaped observation, and fungus elements always remained undestroyed in the hair follicles. **Chrysarobin** and **Tincture of Iodine** are on the whole the most satisfactory, but have great drawbacks. **Losophan** was as good without the inconveniences.

The writer is informed that **Benzine** is an excellent remedy much used in France.

TOE-NAIL (Ingrowing).

Synopsis.—(Vol. 1894, p. 546.) Application of 1 part Paraffin and 2 of Tallow will often relieve.

TONSILS (Diseases of).

Tussaud[1] concludes that abuse of alcohol and tobacco are predisposing factors in the development of tuberculosis of the tonsils. As treatment he prefers the **Galvano-cautery**, carrying this not only through the diseased tissues, but into the surrounding comparatively healthy tissue, thus preventing absorption by forming a barrier of sclerotic tissue.

Babes,[2] has recently employed injections of the **Serum** of immunized dogs in treating human tuberculosis. The dose administered has varied from 5 to 10 grammes of antitubercular serum to which has been added a 1 per cent. solution of **Phenic Acid**. The cases treated have been few, and as yet no positive conclusions can be drawn, but the author affirms that the tubercular patients subjected to the treatment have been benefited. He therefore recommends the employment of preventive inoculations of serum of strongly immunized dogs in children of tubercular parents, who are almost sure to become affected with the hereditary disease.

An astringent pill in intestinal tuberculosis[3]:—

℞ Cupri Sulphatis	gr. ¼		
Pulveris Opii	gr. ½	Extracti Gentianæ	gr. ij

Misce et fiat pilula. 1 or 2 pills for a dose; repeated if necessary.

REFERENCES.—[1] "Lyon. Méd." April 22, 1894; [2] "Bull. Génér. de Thérap." [3] "Practitioner," March, 1894.

Synopsis.—(Vol. 1894, p. 547.) Antiseptic Spray to clean crypts and instead of brushing in astringents. Mild Galvanic Current. Injection of swollen tonsils with Carbolic Acid, 2 to 100. Injection of Iodine Trichloride, 2 to 1000. For hypertrophy, Partial Ablation with Iodine Applications and removal of concretions. Friction on the cut glands with Iodine 1 part, Potassium Iodide 1, Distilled Water 4 to 6 grms. Paquelin Cautery with Cocaine (5%) to reduce tonsils. For those disposed to tonsillitis: R Ol. Menth. Pip., ♏ viij; Ac. Carbolic Cryst., ʒj; Sp. Vin. Rect., ʒij; M. *Sig.*—10 drops in cup of warm water as gargle night and morning. In suppurative tonsillitis paint with solution of Glycerine and Zinc Chloride (1—20) and 20 grs. Salol t. d. For hypertrophy of lingual tonsil: R Iodine Bichlor., gr. vj; Iodide of Potass., gr. xij; Ol. Menth. Pip., ♏ xij; Glyc. ʒj; M. Paint daily.

TORTICOLLIS (Spasmodic).

Allan McLane Hamilton, M.D., New York.

Sinkler, after the use of **Counter-irritation, Galvanism,** and **Actual Cautery, Nerve-stretching** and other surgical measures, has obtained excellent results in the treatment of this disease by large doses of **Conium**, a drug which, in his opinion, is in every way better than belladonna or its alkaloids.

REFERENCE.—"Therap. Gaz.," March 15, 1894.

TREMOR (Mercurial).

Synopsis.—(Vol. 1894, p. 551.) Douche, Pack, and Shower Bath, with Gymnastics, Massage, and Nerve Tonics.

TUBERCLE (Surgical Treatment of). *W. Arbuthnot Lane, F.R.C.S.*

On the Use of Sulphur in Surgery.—In 1893 I published a paper in the "Lancet," entitled, "One of the best applications of iodoform in surgery," in which I described a new mode of using iodoform in the treatment of tubercular disease of bones and joints. It consisted in carefully cleaning out and drying any cavity in a diseased bone. This can be done very thoroughly when the joint affected is in the extremities, since the circulation can be controlled absolutely. The cavity is then firmly plugged with iodoform which has been sterilized with carbolic lotion. In this way iodoform is used as a packing which, as it is very insoluble, occupies for a considerable time, with an aseptic material, a cavity which would otherwise have been occupied by blood in which tubercular organisms would readily multiply. Any tubercular organisms left in the wall of the bony cavity are destroyed by the products of the decomposition of the iodoform which is brought about by the living tissue. I may say that this is the only use I now make of iodoform.

Figs. 39 and 40 represent respectively cavities in the femur and in the tibia and astragalus which were successfully treated by this method. They are of much interest since they were the two first cases in which I applied this mode of treatment. Even if the cavity of the joint has been fouled previous to the operation by the bursting of an abscess or by surgical interference, after careful cleansing and the thorough removal of all tubercular material, the presence of a moderate amount of iodoform in a cavity in one of the bones entering into the formation of the joint will in all probability obviate any new growth of the tubercle bacillus in the part, while if the skin was intact before the operation the surgeon can guarantee with almost absolute certainty a successful result.

In the case of joints, such as the hip, sacro-iliac synchondrosis and

the various portions of the spinal column, it is often impossible to remove more than a proportion of the tubercular material present, or to plug any cavity in bone effectually with solid iodoform. The probability of success in these cases is often much lessened by the presence of organisms other than those of tubercle. Feeling very dissatisfied with the results I obtained in these cases, I looked about for some non-poisonous drug, which, under the influence of living tissues would form products more powerfully germicidal than those which result from the decomposition of iodoform. It occurred to me that sulphur might produce sulphurous acid in sufficient quantity to be of service as a germicide, if it were placed in contact with a raw surface. Consequently I used it largely in the treatment of cases such as I have referred to, and found that instead of its being a comparatively inert substance, when in contact with recently incised structures it produces materials which are powerfully caustic and destructive in their action, while at the same time a small quantity of sulphuretted hydrogen is evolved.

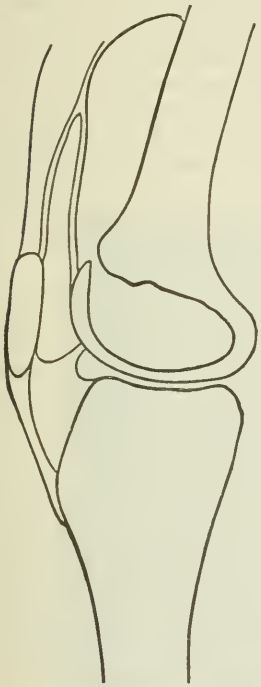


Fig. 39 represents a vertical antero-posterior section through the knee joint. The cavity in the femoral epiphysis is shown to communicate with a collection of tubercular material behind the synovial membrane of the articulation.

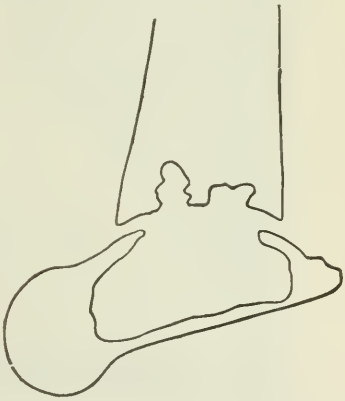


Fig. 40 shows a vertical antero-posterior section of the lower end of the tibia and astragalus, the latter especially being extensively destroyed and excavated by the tubercular process. This patient can now walk comfortably and gracefully, the ankle joint allowing of considerable freedom of movement.

It would seem that sulphurous acid is first formed, and that it rapidly becomes converted into sulphuric acid. In my earlier cases I left the sulphur for too long a period in contact with the living tissues, and so produced an excessive destruction. Now, in a recent wound, it is left for only twenty-four hours, and this time is sufficient to render the part sterile. When the surface is a granulating one, as in any discharging tubercular cavity, sulphur is very much less destructive in its action, and can be introduced frequently with the greatest advantage.

When used in a recent wound the precipitated sulphur sterilized by being kept in 1 in 20 carbolic lotion is diffused through plain gauze either in its moistened form or mixed with a little glycerine, while for injection into tubercular cavities it is made into a cream with glycerine, when it passes easily through the nozzle of a syringe. It is used in the same way for tubercular ulceration of the bladder or rectum, where it acts with marvellous benefit to the patient.

When the various joints of the tarsus or carpus are affected by tubercle, the emulsion of sulphur may be made to diffuse itself between the several bones by a little manipulation. Since I discovered the remarkable germicidal qualities of sulphur, I have never been obliged to amputate for tubercular disease, and I trust that by the use of this powerful remedy amputation for tubercular disease will not be required in the future.

In the case of lupus, sulphur applied on the raw surface causes rapid destruction. This may be hastened by scraping before the sulphur is applied, and if the lupus be covered by an epithelial layer, it is necessary to freshen the surface to enable the sulphur to act vigorously upon it. It is not only in the treatment of tubercular disease that sulphur is of the greatest assistance to the surgeon, but it is of equal benefit in the treatment of inflammatory processes resulting from the presence of organisms other than those of tubercle. For instance, in extensive ulcerative stomatitis, or in foul ulcers about the mouth, firm packing with gauze and sulphur rapidly cleans the surface.

I cannot illustrate its advantages in foul recent wounds better than by describing two instances of its use :—

Case I.—A man fell forty feet, transfixing his forearm on the spike of a railing, which tore its way through the skin and muscles along the whole length of the forearm, much dirt and clothing being driven into the substance of the pulped and lacerated muscles. The hopelessly damaged pieces of muscle with the pieces of clothing and most of the dirt were removed, the skin cleaned, and gauze permeated with sulphur was introduced into every crevice of the lacerated muscles. This was removed at the end of twenty-four hours, when

the whole surface of the wound presented a grayish colour, owing to the presence of the superficial slough resulting from the action of the sulphuric acid generated. The part was kept aseptic, and the sloughs separated, and a useful arm resulted. As far as my experience goes, I know no other means by which I could have saved the arm.

Case II.—A man about forty, of very alcoholic habits, sustained a foul wound of the dorsum of the foot, just behind the toes. Gangrene of the four outer toes and the adjacent portion of the foot developed in a few hours, and was associated with a rapidly spreading œdema of the foot and leg ; in fact it was an acute infective spreading gangrene in a man who was saturated with alcohol. My first thought

Fig. 41.—Representation of foot during healing.

was immediate amputation, but on consideration I determined to try the action of sulphur. The gangrenous part was cut away, the brawny œdematous tissue left was packed with sulphur, and the whole foot was wrapped in a hot compress. The sulphur produced rapid destruction, the brawny œdema and redness quickly subsided, and later the necrosed portions of the metatarsal bones were removed. *Fig.* 41 represents the healing granulating surface left.

These cases serve to indicate sufficiently the immense advantages which the surgeon can derive from the use of sulphur. That the

physician may also find it of very great assistance in the treatment of tubercular disease of the lungs and air passages, is also very probable. It might be introduced by a needle into the apices of the lungs in the form of a glycerine emulsion, or it might be inhaled finely diffused through the air by some such means as a powerful bellows, In ulcers of the stomach it might act in a manner similar to that displayed in ulceration of the mouth ; and many other modes in which it might be applied with reasonable hopes of success will suggest themselves to the reader.

The following summarizes briefly the action of the drug :—

(1,) Sulphur exerts no deleterious influence on the health of the patient.

(2,) It gives rise to products which are powerfully caustic in their action.

(3,) It destroys all organisms with which it comes into contact, whether in a cavity or in the tissues in the immediate vicinity.

(4,) It acts very much more powerfully upon recently incised tissues than upon granulating surfaces.

(5,) It does not interfere with the vitality of healthy cutaneous or mucous surfaces.

(6,) Its action is rendered more uniform and general, and less violent, if it is mixed with glycerine in the form of an emulsion.

(7,) If used in a recent wound it should be removed at the end of twenty-four hours, but if used for an ulcerated surface or a tubercular or other cavity, or for tissues whose circulation is impaired, it may be applied at intervals for many days.

(8,) Precipitated sulphur is much more useful than the sublimed variety, owing to its finer consistence.

(9,) An abundant hot moist compress is often of service in increasing the activity of the chemical processes.

TUBERCULOSIS (Diagnosis of).

Robert Lincoln Watkins, M.D., New York.

The Diagnosis of Tuberculosis by Means of the Third Blood Corpuscle.—The granular masses in the blood, or so-called third blood corpuscles, detected even with a low power microscope, are readily discernible. They occur in groups, or singly. However, when in groups they are often so pressed together that it may be confusing at first to detect their shape ; but a little experience will soon overcome this difficulty (see *Plate XXIV, Figs. A* and *B*).

The function or significance of these granular masses has long been a subject of theory or conjecture, but no positive use has ever been ascribed to them. Investigation has finally led to the conclu-

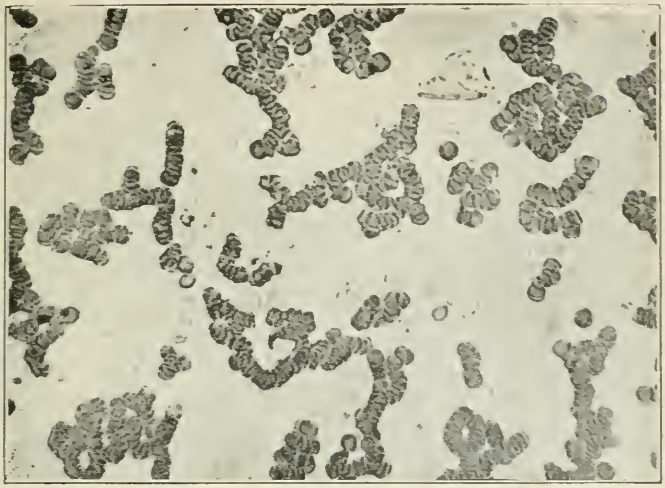


Fig. A

Advanced case of Tuberculosis, showing the tubercular granules (× 450).

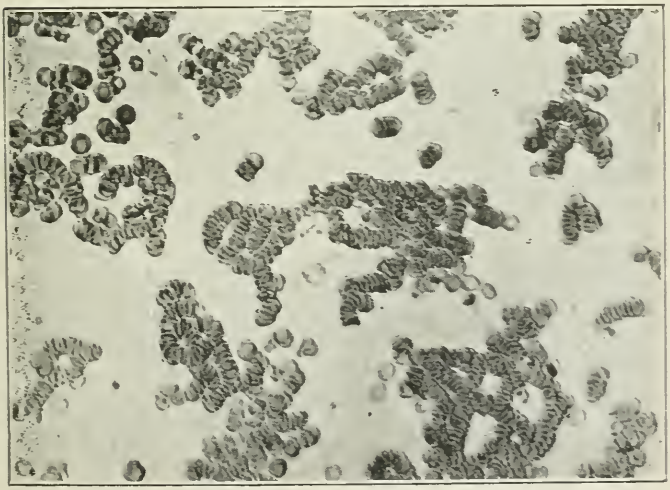


Fig. B

Same case as *Fig. A* after the third blood corpuscles have been dissolved.

sion that these masses, so long considered a normal element of the blood, are pathological and only pathological; not only so, but they are also pathognomonic in that they surely declare the presence of a tubercular diathesis.

Still farther, the third blood corpuscle is the very first indication, even when all other signs are absent, and tuberculosis in any form is impossible without its presence in the blood. This third blood corpuscle makes its appearance long before the cough, or before any of the formerly recognized signs and symptoms appear. Not only is it found in pulmonary consumption, but in Potts' disease, hip-joint disease, chronic abscess, and lupus, which diseases are recognized by the best authorities as tubercular. It is also found in some cases of rheumatism and asthma, and often in people who appear perfectly well; but it is always the forerunner of tuberculosis.

The statement has been made by many, and, of course, has been known for a long time, that certain slowly acting blood changes, called dyscrasia, precede tuberculosis.

From my experience, I believe the third blood corpuscle to be the *sine qua non* of the tubercle bacillus, and as such is one of the chief means of diagnosing this *dyscrasia, which it produces.* It is also undoubtedly one of the foods of the tubercle bacillus, and the only visible one in the blood. In a series of experiments, extending over many years, I have demonstrated that the tubercle bacillus will live in acute tubercular blood, but will not live in blood which does not contain the third blood corpuscle. The results of these experiments have been published in previous articles.

During the past few years, both in private practice and in the hospitals, I have examined the blood of many infants before and after nursing or feeding, and have found that a baby in unhygienic surroundings, will have this third blood corpuscle produced in its blood in from three to ten days by using sweetened water and milk, or by over-sweet condensed milks.

The third blood corpuscle is very often discovered in the blood of infants born of tubercular mothers, while it has never been discovered by me in the blood of infants born of non-tubercular women, when, from the very beginning, they have been nourished by their mothers' breast.

The following are some of my recent cases, which may well illustrate the diagnostic value of this corpuscle :—

A few days ago a young lady called to have her lungs examined. She had been staying indoors a short time on account of a cold, but the night before something came up in her throat like blood. I ex-

amined her chest, and so did another physician. Nothing was discovered, except a little rough breathing. On examination of the blood, I found it loaded with these corpuscles, which decided me in the diagnosis of hæmorrhage and tuberculosis. Two days after, while going up stairs, she had a severe hæmorrhage, with some fever, and which has been since followed by other similar attacks. At the present time (two weeks after) she is in bed with high temperature and night-sweats. In my experience such a case is not uncommon.

Mrs. H—— came to me with a supposed cancer on the forehead. It was a round ulcer, about one and a-half inches in diameter, and was most painfully sensitive. The neuralgia was quite extensive, radiating from the ulcer all over the head. There were also little nodules here and there over the forehead. This ulcer had been coming on about a year. A microscopical examination of the blood showed the tubercular third blood corpuscle present, and I then made a diagnosis of tubercular ulcer or lupus, and not cancer, which diagnosis has since been confirmed.

Mr. H——, a single man, came to me only a few days ago, complaining of a cough, with expectoration and pains in the chest, his history showing that most of his family had died of tuberculosis. A physical examination of his chest revealed evidence (in connection with the history) which strongly favoured the diagnosis of commencing consumption. But on examining the blood no corpuscles were found; therefore the patient was at once set at rest by the assurance that no tubercular trouble existed.

These cases are only a few selected from many, to show practically that experience has confirmed the pathological character of this third blood corpuscle. I present this view to my brethren, hoping that they will be assisted in their diagnosis as I have been, in the incipient stage of tuberculosis, most difficult often, to discover, and most important to the patient, in that the disease at that stage is more controllable than at any other time.

I want to emphasize especially the value of the absence of the *tubercular granules* from the blood, which enables us to state indisputably, that no tuberculosis is present. The symptoms, although possibly suggestive of tuberculosis, must therefore be caused by some other disease.

REFERENCES.—Pan-American Medical Congress, "Transactions," Sept., 1893; "Medical Record," July 17, 1894.

[*Editorial.*

Osler[1] remarks that the symptoms of a profound intoxication in tuberculosis are met with under three conditions: First, in those

rare cases, described most commonly in children, in which death may occur with symptoms of a profound toxæmia before there are any extensive localised foci of disease. "The children have presented in the course of the disease all the signs of a profound intoxication, and as the tuberculous lesions of the lungs and all other organs are altogether insufficient to produce death, it is quite reasonable to attribute the fatal results to the bacillary intoxication." These are the instances of the *fièvre infectieuse tuberculeuse suraigue*. Second, acute miliary tuberculosis is often accompanied with toxic features, giving to many of the cases clinical pictures of severe typhoid fever. *Post mortem*, miliary tubercles are found extensively throughout the viscera and on the serous surfaces. Third, in chronic pulmonary tuberculosis there may develop, with or without fever, a profound toxæmia, with dry tongue, delirium, rapid pulse, and signs of intense intoxication. The patient may be admitted to hospital unconscious, with a normal or subnormal temperature, and, as in a case admitted into the Philadelphia Hospital, the autopsy alone reveals the true nature of the disease.

The case alluded to may perhaps be regarded as an instance of the *febris tuberculosa peracuta*. The striking features were the existence of a local tuberculous adenitis in the group of left cervical lymph-glands; a miliary tuberculosis of very moderate intensity in the liver and spleen; and a clinical picture of the most profound toxæmia.

Miller[2] considers that **Bier's Method** of inducing congestion as a remedy for articular tuberculosis is deserving of further trial. A broad elastic band is placed round the limb above the diseased part sufficiently firmly to produce venous congestion. Bier recommends that this congestion should be kept up continuously, and that the patients should be permitted to use the limb. The elastic band should be broad, and a layer of lint or wool should be placed under it to protect the skin. The distal portion of the limb is supported by a bandage up to the affected part, so that the congested area is limited to the immediate neighbourhood of the disease. Miller states that this method is a useful one, and deserves further trial. He prefers intermittent to continuous compression, as the former method is attended with less risk and is followed by equally good, if not better, results.

REFERENCES.—[1] "Philadelphia Med. News," Dec. 2, 1892; [2] "Edinburgh Med. Journ.," Feb. 1894.

Synopsis.—(Vol. 1894, p. 552.) **Iodoform Injections. Essence of Cloves**, 10% in **Olive Oil**, as injection. Injection of 3 or 4 drops **Zinc Chloride**, 1 in 40 solution. **Salicylic Acid** in diachylon ointment, the most useful palliative application to diseased tissue.

TUMOUR (Cerebral). *Allan McLane Hamilton, M.D., New York.*

Mr. Horsley, referring to the incurability of cerebral tumours by drugs, goes further than many others because he does not admit that gummata are really affected by antispecific treatment. While he admits that the use of large doses of **Iodide of Potash** will cause a moderate abatement of the symptoms in this as well as ordinary tumours, and a rather striking though temporary effect in specific lesions, he finds that autopsies do not show any conspicuous reduction in size of the growth. Though improvement under iodide of potassium occurs in many instances, it does not follow that it is an index to the nature of the case. As regards tubercular nodules, everyone must have seen more than one case in which the symptoms of the tuberculous tumour were present, including the closing of the symptoms, but in which total remission of the same occurred and the patient ultimately survived, unfortunately, as a rule, blind. Such tuberculous nodules have been found at post-mortem examinations densely fibrous and with caseated centres. Clearly, therefore, in the case of tuberculous disease, treatment by **Arsenic, Cod-liver Oil**, etc., is justifiable for a certain time, the duration of which may be longer than in the instance of iodide of potassium, four months, for instance, as against two.

REFERENCE.—"Brit. Med. Journ.," Dec. 23, 1893.

TYPHLITIS. (See "Appendicitis.")

The therapeutic indications according to M. Grasset, depend on whether there is an actual acute inflammatory attack, or whether the case is one of recurrent typhlitis between the attacks, or whether there is typhlitis with persistent cæcal engorgement. In the last-named case medicinal treatment usually fails, and an appeal to the knife becomes a necessity. In the case of a recent typhlitis with acute exacerbations the physician may treat the appendicular colic, combating the pain with warm baths, evacuating the intestinal contents, and, if possible, resolving the inflammation. M. Grasset fulfils these various indications as follows: (1,) A full **Warm Bath** of from half an hour to an hour in duration is given; (2,) Every hour the patient is to take a teaspoonful of a purgative potion, consisting of 1 part each of **Castor Oil** and **Oil of Sweet Almonds** and 2 parts of **Syrup of Lemon,** until a copious evacuation of the bowels has been produced; (3,) The iliac region is to be anointed with an ointment consisting of **Mercurial Ointment** and **Belladonna**, and this is to be followed by the application of a large, hot, thin poultice of **Linseed Meal.** In very stubborn cases M. Grasset adds to the purgative potion a drop of **Croton Oil.**

In cases of recurrent typhlitis the treatment during the intervals

consists in preventing overloading of the intestinal canal and in the use of antisepsis, revulsives, and resolvants to the seat of inflammation. For this purpose he advises: (1,) A diet that leaves little residue; (2,) Every week the application of the **Actual Cautery** to the painful and infiltrated region; also every day, or as often as may be necessary, frictions with an ointment containing **Belladonna**; (3,) To overcome constipation, at bedtime a laxative pill, consisting of $\frac{1}{6}$ of a grain each of **Powdered Belladonna, Extract of Belladonna,** and **Podophyllin**; (4.) The insurance of intestinal antisepsis by taking before and after each meal a capsule containing 7 or 8 grains of **Benzol-naphthol.**

REFERENCE.—"New York Med. Journ.," Jan. 27, 1894.

TYPHOID FEVER.

Synopsis.—(Vol. 1894, p. 553.) Cold Bath, Quinine, Antipyrin, Antifebrin, Phenacetin. Calomel probably best intestinal antiseptic, 8 to 10 grs. three or four times in the first twenty-four hours. For gastric antisepsis Bismuth and Charcoal; for small intestine Salol, Sodic Salicylate or Benzoate, Camphor or Ammonium Benzoate, and for large bowel β-Naphthol or Charcoal; for mouth Saccharin. Carbolic Acid Pills, gr. $2\frac{1}{2}$ to 3, coated with Keratin, are theoretically indicated.

TYPHUS.

Dr. Knox Bond points out the unsatisfactory results accruing from the use of drastic drug treatment, which is strongly deprecated. In his series of cases the following simple measures were carried out. Each inmate of the eight-bedded wards had a cubic space of 2,800 cubic feet and floor space of 225 square feet allotted him, in wards freely lit and ventilated by large window spaces, and heated by open fire-places. Diet during the acute stage consisted chiefly of milk and beef-tea; eggs and bread were also allowed to milder cases; and cold water *ad libitum*. Fish was given as soon as the tongue moistened after crisis, meat when the tongue became clean in convalescence. Constipation was relieved by enemata or castor oil. This comprised the entire treatment in many cases. A mixture containing dilute **Hydrochloric Acid** and **Gentian** was given as a *placebo* to several patients. Symptoms were dealt with by appropriate remedies as they arose. Enemata of hot water at 110° F., or of starch, were serviceable in the treatment of diarrhœa. Opium, so useful an addition to the starch enemata in typhoid diarrhœa, was badly borne here. An expectorant mixture, containing **Oleum Terebinthinæ** ♏ x—xx, was most useful in the mixed condition of bronchitis and lung congestion which is the pulmonary associate of this fever. Inunction of **Oleate of Mercury** (10 per cent.) was of some value in

cases of parotid swelling. The benefit attending the use of **Sulphonal** as a hypnotic was undoubted. Sleep was induced, and delirium calmed. Added experience led to caution in its administration where profound cardiac failure existed, associated with severe pulmonary and renal symptoms.

Referring to the resemblance presented by the clinical symptoms of typhus to the effects of alcohol, Dr. Bond says that alcoholic stimulants are as inadmissible as it would be (were it possible) to inflict a further dose of the typhus poison. All that alcohol can do for the heart is outdone by the already-present virus of typhus fever. Each acts primarily as a cardiac stimulant, and each, later on, when degenerative change has commenced, is equally hurtful in robbing the flagging organ of *rest*, the factor imperatively needful to recovery in the now debilitated condition of the cardiac muscle. Dr. Bond knows no valid reason for the retention of alcohol as a remedy in the treatment of this disease.

REFERENCE.—"Practitioner," June, 1894.

Synopsis.—(Vol. 1894, p. 556.) **Alcohol, Ammonia, Nux Vomica** and **Quinine** are indicated. For exhaustion, **Musk** in full doses. **Saline Purgatives**, *e.g.*, sulphate of magnesia or enemata or calomel in fractional doses. **Salol** by mouth or rectum as antiseptic. **Permanganate of Potassium** as rectal injection. **Ipecacuanha** for gastric catarrh, avoiding other emetics. **Chloral** for severe headache, delirium and insomnia, or **Hyoscine**. Insomnia without headache may be met by **Valerian** or **Camphor**. For fever, **Quinine** or **Tepid Baths**. **Strychnine** in marked prostration and collapse.

ULCUS MOLLE.

Synopsis.—(Vol. 1894, p. 558.) **Scrupulous Cleanliness. Local Hot Baths**, 40° C. **Caustics**, *e.g.*, chloride of zinc 1 part, zinc oxide 9 parts, and water to form a paste. Next, mild **Antiseptics** in powder or solution, *e.g.*, iodoform, aristol, etc. **Tonics** internally. **Tartrate of Iron** and **Potassium** internally and externally said to be specific in phagædena; or washing morning and night with **Boric Acid** water as hot as possible; application of **Silver Nitrate Solution**, 1 in 20, dressing with **Iodoform.**

ULCUS CRURIS. *T. Colcott Fox, M.B.*

Rosenthal[1] starts with the fact that the majority of leg ulcers follow varicose veins, and lead to chronic œdema and a callous induration of the borders of the ulcer. This complication has been met by such resources as **Thaden's Dressing**, strapping with **Vigo's Plaster, India-rubber Bandaging**, etc., but **Unna's Glyco-gelatine Treatment** is the best. However, the retention of secretions, sometimes abundant, is a great bother. Rosenthal attempts to get over this difficulty by making the dressings fenestrated. It should only be used where the ulcer does not surpass the palm of the hand in size. He also does not use it

if the periphery is too eczematous. He covers the ulcer with a watch-glass, and paints the leg with glyco-gelatine and applies a tarlatan bandage. Then a second painting and a second bandage. The glass is then removed and the immediate neighbourhood of the ulcer is dabbed with a little wool dipped in the gelatine. The borders of the dressing near the ulcer are protected by collodion. Karewski did not believe Unna's method was very good, or could cure big ulcers. He believed in daily dressing the ulcers in a thoroughly aseptic manner, and when the ulcer was healed the glyco-gelatine was very useful for a time. Good treatment was to extirpate the varices and graft the ulcers.

Several other authors give their particular modification of Unna's treatment, which was published in 1882.

Borschtscheff,[2] covers the healthy part of the leg up to the limits of the ulcer with the following glyco-gelatine, (gelatine, 10 grammes, oxide of zinc, 10 grammes, glycerine, 10 gr. water, 30 gr.). Weeping or eczematous regions surrounding the ulcer are first powdered with iodoform and then painted over. A further coating of collodion makes the dressing more resistant and lasting. The ulcer is treated according to the particular indications, and then the limb is bandaged. The ulcer should be dressed at first every fourth or fifth day, afterwards, every eight to ten days.

Iliushkoff,[3] recommends the treatment as cheap and easily applied. First of all a hot foot-bath is given and the leg carefully cleansed with soap and a brush ; the ulcers are then disinfected with a solution of corrosive sublimate of the strength of 1 in 1000. They are then—if not too painful—well rubbed with gauze soaked in the sublimate solution, dried with cotton wool, and sprinkled over with dermatol. **Zincated Gelatine** is then applied in its liquid state over the whole leg and a bandage carefully put on, each turn being covered with more of the gelatine. This may usually be left untouched for at least a week.

Van't Hof,[4] of Liege also speaks highly of a treatment conducted on similar principles.

Frank,[5] treats ambulant patients suffering from chronic ulcer of the leg as follows : The granulations are first thoroughly cleansed, and if hypertrophic, are treated with **Silver Nitrate,** if putrid, with **Iodoform,** and so on. The leg is washed, shaved, and painted up to the ulcer with Unna's glyco-gelatine. The sore is covered with gauze and the limb bandaged with gauze. A firmer and more lasting support is made by covering this gauze with another layer of glyco-gelatin and bandaging over that again. An abundant discharge renders the re-

newal of the dressing necessary every few days. A 10 per cent. resorcin plaster promotes epithelial formation when the granulations are healthy. For unusually callous ulcers diachylon plaster strapping and flannel bandaging are necessary. He gives the following formula for the glyco-gelatine :—

℞ Oxide of Zinc	30 parts	Glycerin	50 parts
White Gelatine	40 parts	Water	90 parts

This may be melted in a glue-pot as required.

We may take this opportunity of mentioning that Menahem Hodara[6] after full trial considers the following formulæ the best:—

Soft Jelly.

℞ Aquæ	55·0	Glycerini	12·5
Gelatinæ	12·5	Zinci Oxidi	20·0

(Melts at 100° F., and sets at 82° F.)

Hard, Very Contractile Jelly.

℞ Aquæ	50·0	Glycerini	10·0
Gelatinæ	15·0	Zinci Oxidi	25·0

(Melts at 101° F., and sets at 87° F.)

Cheap Jelly for poor people.

℞ Aquæ	50·0	Glycerini	10·0
Gelatinæ	10·0	Zinci Oxidi	30·0

Antiseptic Powder.—The following formula has given Dr. A. Pick,[7] very satisfactory results in all cases where iodoform is ordinarily employed :—

℞	Corrosive Sublimate	$\frac{1}{5}$-$\frac{1}{3}$ grn. (1·2-2 ctg.)
	Boric Acid	℥j (31 grme)
	Tannic Acid	10 grains (60 ctg.)
	Milk Sugar	sufficient for ℥ij (62 grme.)

$\frac{1}{5}$ grain of corrosive sublimate, in this mixture, gives a 1 in 5000 trituration of bichloride, and $\frac{1}{3}$ grain, one of 1 in 3000. The sublimate should be mixed very gradually and thoroughly with the milk sugar—the other ingredients being slowly added one by one, in order to obtain a uniform distribution of the bichloride. The author states that this powder is more reliable than any iodoform preparation, and has no odour; the boric acid and milk sugar are both protective as well as antiseptic, and the milk sugar prevents, besides, the deterioration of the bichloride. The tannic acid may be omitted, in case its desiccating or styptic action is not wanted.

Lucas-Championniere has suggested the following for an antiseptic powder : iodoform, powdered benzoin, powdered cinchona, carbonate

of magnesium, of each equal parts, with a few drops of oil of eucalyptus.

Gilbert[8] effected a cure of advanced varicose ulcers in about three weeks by the application of **Europhen**, alternately in dry powder, and a 2 per cent. ointment.

Defalein and Neuberger[9] spoke highly of this drug.

Julius Schmidt[10] tested in five cases of obstinate ulcers of the leg, the odourless, tasteless, non-poisonous, insoluble, powdery combination of bismuth, sulphur and salicylic acid, known as **Thioform**. The ulcer having been cleansed and disinfected, the thioform was thickly dusted over it and covered with cotton wool and a bandage. Every fourth day the whole dressing was changed, and a cure resulted in two to three weeks.

Hoffmann likewise praises thioform, as non-toxic, hæmostatic and easily manageable.

Doumer of Lille, claims most satisfactory results in many forms of ulcers of the legs by **Static Electricity.** The ulcer is first washed with some antiseptic solution, and then covered with a thin layer of absorbent cotton wool. The patient is then placed on an insulating stool and connected with the negative pole of an electrical machine. The positive electrode is now brought near enough to the ulcer to cause the passage of the electrical aura, but not that of any spark. This aura is allowed to play on the part affected for about ten minutes, and cotton wool dressing is then applied. These sittings are repeated twice a week.

Erdinger[11] extols the effects of **Massage**. After the preliminary cleansing and disinfection, the part is massaged, not with the whole hand but with the tips of the fingers, previously greased with boracic acid vaseline. By this means the amount of pressure can be effectually graduated, while these *effleurages* appear to exert a distinctly sedative influence on the peripheral nerve-endings. The operator begins at the upper part of the leg above the ulcer working from above downwards towards the latter in a concentric manner. The amount of pressure applied and the duration of the sitting vary according to the condition of the skin around the ulcer. The edges of the ulcer are likewise massaged, more or less energetically, according to the degree of induration of the tissues. The operation is commenced on the upper edge extending gradually from thence along the lateral edges to the lower margin of the ulceration. Lastly, the *effleurages* are continued over the portion of the leg below the ulcer.

In cases of gray, sanious, torpid ulcerations, the floor of the ulcer should also be massaged, being previously covered with a piece of

linen smeared with boracic vaseline over which the operator runs his fingers.

Each sitting lasts from ten to fifteen minutes. The parts are massaged every day at first, but as the condition of the leg improves and the ulcer begins to heal up, the treatment is repeated at gradually longer intervals.

All pain disappears at the end of a few sittings (from two to six) and sensation returns to normal in the neighbourhood of the ulcer. From this time the latter rapidly heals up.

Complete recovery took place in the cases reported by Dr. Erdinger, in from thirteen days to two months, according to the size of the ulcer, and it is noteworthy that several of these patients continued to attend to their occupations throughout the whole course of treatment.

Witthauer[12] strongly recommends **Sozoiodolate of Mercury** (1 part to 90 of lanoline and 10 of olive oil) in the treatment of ulcers of the leg and foot. After thorough cleansing this preparation is applied night and morning spread on lint, and firmly bandaged. Any sluggish raw areas should be scraped and sprinkled with a powder composed of 1 part of the sozoiodolate to 9 of talc. Any burning pain is slight and transitory.

Diver[13] obtained good results in two by the use of **Chlorine Gas.** The gas used was formed by pouring about 2 drachms of potassium chlorate, with 1 drachm or more of hydrochloric acid, into a pickle or marmalade jar, the outside of which was covered with brown paper. After this a disc of white paper was introduced, and on top of the paper a sufficiency of absorbent wool; a large cork was then fitted to the neck of the jar. The wool, yellowish green on the surface when at first exposed to view, was then placed over the ulcer in each case and quickly covered by gutta-percha tissue and bandaged as usual. No rest was enjoined. The gas was probably chiefly chlorine with some peroxide of chlorine in mixture.

REFERENCES.—[1] "Ann. de Derm. et de Syph." p. 473, 1894; [2] "Wratsch," t.xv., 3, p. 71, 1894; [3] "Lancet," June 16, 1894; [4] "Journ. de Méd. et de Chir. Prat.," May 10, 1894; [5] "Journ. Amer. Med. Assoc.," vol. xxii., No. 6; [6] "Monatsch. f. Prakt. Derm.," March 1, 1894; [7] "New York Med. Journ.," lix., p. 432, 1894; [8] "Brit. Med. Journ., Jan. 13, 1894, from "Balneologisch. Centralb.," ii., B.; [9] Nuremberg Congress, 1893; [10] "Therap. Monatsch.," April, 1894; [11] Thesis quoted "La Sémaine Méd."; [12] "Archiv. f. Derm. u. Syph.," Band xxvi, Heft 3; [13] Clin. Soc. Lond.

Synopsis.—(Vol. 1894, p. 557.) Europhen as dusting powder after washing with 3% Carbolic Solution. Alumnol. For discharging painful ulcers: ℞ Ac. Salicyl., 8 parts; Ac. Boric, 4 parts; Zinc Oxide, 3 parts;

Starch, Talc. āā 30 parts. **Resorcin Ointment**, 3 to 5%, relieves pain. **Friar's Balsam**, ʒj—ij in ʒj **Zinc Ointment** nearly specific for indolent sluggish ulcers. Packing deep varicose ulcers with **Iodoform Gauze**, dusting with **Dermatol** and covering with absorbent wool compress over which a large smooth sponge wrung out of water is applied. In shallow ulcers a compress of solution of **Aluminium Acetate** is applied direct, covered with waterproofing, and the sponge applied over all, and the limb bandaged up from the toes. Simple wet compress, together with pressure by means of the sponge is useful.

URÆMIA (Treatment of).

W. Blair Stewart, A.M., M.D., Philadelphia, Pa.

Dr. Beverley Robinson[t] says that, although there is considerable doubt in regard to the cause of uræmia, we know sufficient to interpret it in the acute or chronic form, and we no longer believe that it is due to urea or ammonia. Cold and errors in diet are important causative factors, and, when due to the former, the patient must be confined in a warm room and bed. If the skin is dry and inactive give hot-air or hot-water baths, followed by wrapping in blankets, to produce free sweating. If there is evidence of renal congestion, place dry or wet cups over the renal region, accompanied by dry frictions of the skin.

When diet is at fault, milk must be given exclusively for a time, and the patient must breathe pure air and take moderate exercise; but he emphasizes that fatigue, emotional excitement, and even slight intercurrent disorders will be prejudicial.

The indications for treatment are to eliminate the poison and to neutralize it as far as possible. Diuretics will often accomplish the first indication, and for this purpose the **Potash Salts** are often employed with benefit, but their poisonous effects are such that the amount taken should be carefully limited. Infusion of **Digitalis** also presents distinct objections when the kidneys are almost impermeable or the renal tubules clogged, when there is a spasmodic vascular condition or a passive hyperæmia. It tends to increase the contraction and hyperæmia, and, as the kidneys cannot eliminate it, there is a cumulative result accompanied by obstinate nausea and vomiting. Digitalis only increases uræmic symptoms when given in large doses. When weak heart is a primary factor in uræmia, digitalis can be given with good results in some cases. Diaphoresis and active purgation remove considerable water from the body, but when compared with bloodletting, the poisons removed are about nine-tenths less; less water will pass through the kidneys, and they will recover less rapidly.

The writer also upholds the use of moderately cold water by

high enemata, with the object of causing contraction of the renal vessels through reflex stimulation of the abdominal nervous centres, and by increasing vascular tension through absorption of the water and filling the vessels; thus promoting diuresis, and diluting the poisonous matters in the blood. A portion of the injected water is expelled with fermented ingesta, but the author's experience shows that much of it is absorbed. A most happy result was obtained in one case where the vitality was so low that it was necessary to use the injections at blood-heat, and to which had been added 1 per cent. of common salt. They were given several times daily with a douche-bag and a medium-size, long, soft catheter of red rubber attached to the nozzle of the douche-bag with the patient in the dorsal decubitus. No convulsions followed; the pulse improved; the heart's action was strengthened; and an increased flow of urine followed. The symptoms in this case were caused by renal insufficiency, although the course of the disease was a fatal typhoid.

When other means have failed and the case is menacing, recourse is had to venesection or blood-letting with cups or leeches. Coma and convulsions sometimes disappear during this treatment. Twelve to twenty ounces can be drawn from a robust plethoric patient, but in delicate subjects caution must be observed as to the amount taken and, in some cases, the blood abstracted must be replaced by saline transfusion. "The operation of transfusion in the treatment of uræmia may be at times very useful in tiding over an imminent period and, perhaps, in enabling the patient to recover, when without operation he would surely die."

When these methods are contra-indicated hypodermic injections of warm **Sterilized Salt Water** (1 per cent.) should be given. As a rule they are free from pain, and are absorbed even though the patient is at the lowest ebb. Uræmic conditions coming at the end of acute or exhausting diseases are greatly benefited by these injections. In one case one-half pint of salt solution was injected hypodermically. Chloroform anæsthesia is very safe, is indicated in uræmia, and in convulsions previous to blood-letting, so that contractions may not interfere with accurate venesection, the administration being guided by the pulse.

Opium is rarely of value in these cases, and **Chloral** given by the mouth or rectum may replace it with good results, if administered in moderate doses. In one case **Pilocarpine** hastened death, which was preceded by profuse salivation, œdema of the lungs, and profound heart weakness. It is beneficial if it

produces diaphoresis only, without other untoward effects. The author recognizes that these remedies do not meet the underlying pathological causes and, for this reason, places great stress upon diet. Milk is his sheet-anchor, but egg, cheese, and boiled meat may be added very cautiously and under rigid instructions. Intestinal fermentation is a great exciting cause and must be met with intestinal antiseptics. Among symptoms requiring attention are dyspnœa and congestion of the lungs which are met by counter-irritation and cupping; great oppression of breathing by inhalation of **Amyl Nitrite** or **Nitro-glycerine**, or **Oxygen** and **Nitrogen** in combination; delirium by **Chloral**; nausea by **Lime-water, Vichy, Brandy** or **Iodine**; and collapse by hypodermic injections of **Coca, Strychnine** or **Ether.** Dr. Charles T. Parker and Dr. W. Brinsmaid of the Chambers Street (N.Y.) Hospital highly endorse **Venesection** and **Intravenous Saline Infusion** in treating uræmic coma and convulsions, and relate valuable cases in their letters to the author.

P. Jacob,[2] in treating a case of leucæmia with an organic extract made from the spleen, found that there was a connection between leucocytosis, the excretion of uric acid, and the xanthin bases, as the leucocytes were decreased, and the uric acid excretion was greatly increased a number of hours later, but the exact bearing of this experiment is uncertain.

Tincture of **Veratrum Viride** is administered by the mouth, in 10 to 15-drop doses, every hour; or hypodermically in 5-drop doses in the uræmia of pregnancy (eclampsia) with good results, but is very depressing. Cases are reported in the "Medical World," October, 1894.

Dr. Gross says that, in retention of urine for from three to four days, death will ensue from uræmic poisoning, but Dr. J. H. McCartney[3] reports the case of a Chinese married lady, about twenty-one years old, where the urine had been retained after child-birth, with slight dribbling only, for eleven days, and when removed under anæsthesia, there were nearly six and a half quarts. She had great pain, high fever, but no rigors or convulsions, and made an uneventful recovery. Ross[4] reports a case of suppression of urine for twelve days in a ten year old boy who was suffering with malaria. No urine could be obtained by using a catheter. Although he suffered with anæmia and mild uræmic symptoms, he made a good recovery in two months.

Dr. Kaufmann's experiments[5] upon the formation of urea have shown the following results: (1,) The blood always contains less

urea than do the tissues; (2,) Nervous tissue, the spleen, and muscles, contain a proportion of urea which is about similar in all; (3,) The liver contains a proportion of urea which is about double that contained by any other tissue. He therefore concludes that urea is formed in all the tissues, but principally in the liver.

Dr. Peabody[5] administers full doses of **Urethan** hypodermically to control the convulsions of uræmia. He considers this drug a perfectly harmless remedy, freely absorbable, quite unirritating, and painless.

Piperazin is one of the most recent drugs in treating the uric acid diathesis. Dr. D. D. Stewart[7] summarizes the influence of this drug on the urine, and especially on uric acid and urea excretion as follows: "So far as I can see, since piperazin does not increase uric acid excretion, and apparently does exert a salutary effect upon the uric acid condition, the only mode of action possible is such as has been attributed to certain of the alkalies, *e.g.*, the vegetable acid salts of potash. The increased alkalinity of the blood these latter produce is supposed to promote oxidation, increasing the formation of urea, and, perhaps, also, transforming a modicum of the uric acid by oxidation into the former, or into a second more oxidized product than uric acid, such as bodies of the alloxan or allantoin series."

REFERENCES.—[1] "Medical Record," Mar. 17, 1894; [2] "Deutsche Med. Woch.," No. 32, 641, 1894; [3] "Medical News," Sept. 15, 1894; [4] "Medical Record," vol. xliv., p 815; [5] "Medical Bulletin," p. 389, 1894; [6] "Medical Record," Mar. 17, p. 343, 1894; [7] "Therapeutic Gazette," Feb. 15, p. 92, 1894.

Synopsis.—(Vol. 1894, p. 559.) Milk and Diuretics generally; Intestinal Antisepsis; Venesection; Inhalations of Oxygen. Digitalis if cardiac weakness exist, and provided no violent gastro-intestinal symptoms be present.

URETER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

The surgery of the ureter has seriously engaged the attention of surgeons during the past year, and as the result of experiments on animals, successful operations resulting in the saving of kidneys which must otherwise have been sacrificed, have been performed. Not only can an accidentally divided ureter be successfully joined, but where it is thought desirable, the ureter can be united to the intestine, thus diverting the stream of urine from the bladder.

Christian Fenger,[1] in an admirable article on the surgery of the ureter, contends that intra-peritoneal operations upon the ureter, wherein the urine is not absolutely aseptic, should not be undertaken, if an extra-peritoneal operation is possible, on account of the danger of peritonitis.

Catheterization of the ureters from the bladder for purposes of diagnosis is reasonably practicable in the female by the methods developed by Simon, Pawlik and Kelly. In men, catheterization is practicable only through epicystotomy.

Catheterization of the ureter from the bladder as a curative measure for the evacuation of hydro- or pyo-nephrosis has occasionally been performed successfully (Pawlik), but nephrotomy and the attempt to find and remedy the stenosis of the ureter from the pelvis is the better method of treatment.

Uretero-lithotomy is a safe operation by the extra-peritoneal method. Suturing is unnecessary. Drainage down to the wound is sufficient, and the wound heals without stenosis.

Intra-peritoneal ureterotomy should be done only when the extra-peritoneal operation is impossible, and should be completed by careful suturing, covering with a peritoneal or omental flap, and drainage. Opening the peritoneal cavity to locate the seat of the stone may be necessary, but when once the diagnosis is made, the extra-peritoneal operation should be proceeded with.

A stricture of the ureter may be treated by longitudinal division of the stricture and transverse union of the longitudinal wound (*Fig.* 42). For extra-peritoneal operations a continuation of the oblique incision for lumbar nephrotomy from the twelfth rib to one inch anterior to the ilium and along Poupart's ligament to about its middle, is advised.

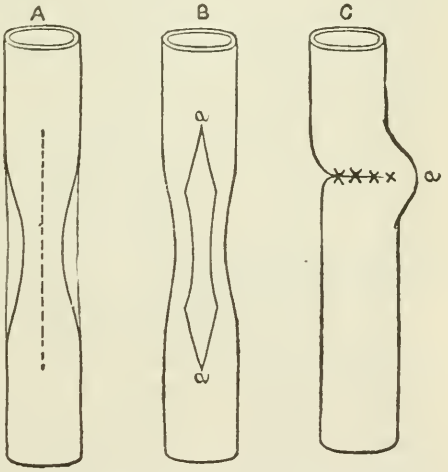


Fig. 42.—Fenger's plan of operating for ureteral stricture on extra-peritoneal surface of ureter. *A*. Ureter showing stricture and line of incision. *B*. Opening through stricture extending into the proximal and distal portions of the ureter. The extreme ends of the incision *a* and *a* to be united. *C*. Ureter after suturing; *a* the bend at the site of the stricture.

Uretero-uterine and uretero-vaginal fistulas can be treated satisfactorily by kolpokleisis, nephrectomy, or under favourable conditions by implantation of the ureter into the bladder.

Complete transverse wounds of the ureter should be treated by Van Hook's method of uretero-ureterostomy, if possible, or if near the bladder by implantation into that viscus.

Loss of substance of the ureter too extensive to permit of uretero-ureterostomy or too high up to admit of implantation into the bladder, may be treated by implantation into the skin or bowel. Implantation into the bowel is almost certain to be followed by pyelonephritis. Implantation on the skin may have to be followed by secondary nephrectomy, which however is less dangerous than the primary operation.

Howard A. Kelly[2] employs two methods in examining the ureters :—

(1,) *Palpation.*—The ureter can be palpated through the anterior vaginal wall from its termination in the bladder up to the point where it passes the broad ligament. Behind the broad ligament the tube can be felt up to the pelvic brim, if the examination be made per rectum, especially if the ureteral sound has been previously introduced. At the brim it can be palpated through the abdominal wall at a point 3 to 3½ c.m. outside of and a little below the promontory, where pressure on an inflamed or sensitive tube always causes pain and sometimes a desire to urinate.

(2,) *Catheterization and Sounding.*—By catheterization, urine from either kidney is obtained, on examination of which the site of disease can be determined. The ureteral sound is used (1,) as a guide to the position of the ureter in hysterectomy or in the removal of pelvic tumours ; and (2,) as a means of diagnosing and curing by dilatation stricture of the ureter. If the stricture be in that part of the ureter anterior to the broad ligament, it can be dilated through the bladder.

In one case, in which the stricture was behind this, the author made a uretero-vaginal fistula, dilated the stricture by passing the sound through this, and afterwards closed the fistula by suture.

Dr. Kelly[3] describes a successful case of uretero-ureteral anastomosis. During the performance of abdominal hysterectomy for myoma of the uterus, a large dilated ureter was cut under the impression that it was a vein. On removal of the uterus Dr. Kelly dealt with the divided ureter in the manner devised and successfully practised by Dr. Van Hook upon the dog. The upper end of the lower portion of the ureter was tied, and a longitudinal slit, one c.m. in length made in its anterior wall 5 c.m. below the ligature. A fine silk suture was then passed through the posterior wall of the lower portion from without inwards ·5 c.m. below the lower angle of the slit ; this was brought out through the slit and caught in the outer coats of the upper portion of the ureter 2 mm. from its end, and then

carried back into the slit, emerging through the wall of the ureter close to the original point of entrance (*Fig.* 43). A second suture was passed at a point directly opposite, catching the upper end in a similar manner.

By making traction on these sutures while holding the slit open, the upper end of the ureter was readily invaginated into the lower (*Fig.* 44).

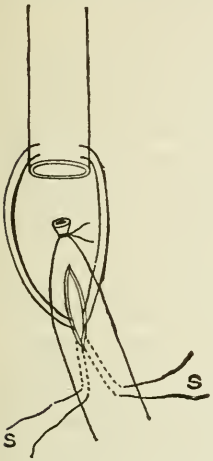


Fig. 43.—Traction sutures, S.S., in place ready to invaginate upper end of ureter into lower.

These sutures were now tied, and in order to avoid the risk of urine regurgitating through the slit, the edges were sutured to the intussuscepted portion with about ten fine silk interrupted rectangular sutures, involving the outer coats only.

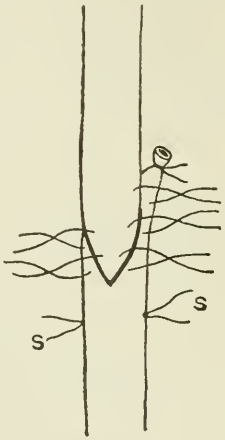


Fig. 44.—Upper portion of ureter invaginated into the lower; traction sutures S.S., tied; lateral fixation sutures in place.

As showing the results of such an operation, the author refers to the condition of the ureter two and a half months after a similar operation performed by Dr. Bloodgood (*Fig.* 45). In this case the tumour was not lessened at the point of anastomosis, there was no dilatation above the anastomosis, and no affection of the kidney on that side.

Fig. 45.—Longitudinal section of anastomosed ureter of a dog showing new lumen and diverticulum.

Mr. E. Cotterell[4] at a meeting of the Royal Medical and Chirurgical Society related two successful cases of ureterolithotomy. In the first case the calculus was found impacted just below the brim of the pelvis; in the second, the patient, a woman, had symptoms of stone in the bladder. Exploration per urethram detected two calculi lodged in the lower end of the right ureter, not projecting into the bladder. They were removed by incising the ureter through the vault of the vagina.

In a paper on impacted stone in the ureter Dr. Cotterell[5] says suppression of urine after impacted calculus can only supervene from two causes : (1,) Impaction of a stone in one ureter, with atrophy of the other kidney ; (2,) When there is only one kidney present.

In ordinary renal colic the passage of the stone may be frequently mapped out by the subjective symptoms, but when the stone is impacted the pain radiates from one spot, which, in the intervals between the attacks of pain is tender to palpation. If a patient has symptoms of stone in the kidney, and a very careful exploration fails to reveal the calculus, the upper part of the ureter should be explored, the nephrotomy wound being somewhat enlarged, if necessary, for this purpose. If not found, a soft bougie might be passed down the tube and an endeavour made to locate the calculus.

When a stone is impacted in the lower part of the ureter in the male, the author advises a perineal operation in preference to Kraske's method, and draws attention to the fact that if the calculus be firmly squeezed between the thumb and forefinger, a very small longitudinal incision is sufficient for its removal, which afterwards contracts so much that suture is not required. He recommends early operation in cases of suppression of urine in patients with a calculous diathesis, and also in cases of renal colic when there is no evidence that the stone has passed into the bladder.

Dr. Abbe,[6] while attempting to remove a foul vesical pouch by the Kraske operation, accidentally tore the ureter which lay in the walls of the pouch. The end of the ureter was then inserted into the pouch and the original operation abandoned. Improvement both locally and generally has resulted.

Mr. Herbert W. Page[7] records a case of rupture of the ureter in which it became necessary to remove the kidney on the affected side. The patient, a boy, about five years, was run over by a cart ; at the time there was no evidence of serious injury. During the next two days blood was noticed in the urine, and patient was feverish at night.

There was now some tenderness in the right iliac fossa, and a suspicion of swelling. Symptoms disappeared after clearing the bowels, and for eighteen days he was apparently well. Patient now became feverish again, with abdominal tenderness and swelling, and dulness on percussion in the right iliac fossa. Thirty-three days after the accident, laparotomy was done, a large post-peritoneal cyst was evacuated of 40 oz. of altered urine, and a drainage tube inserted. The wound continued aseptic and dry for four days, when the dressings were found to be soaked with urine, with the result that the wound

rapidly became septic and discharged purulent urine freely. A month after the first operation the right kidney was removed and found to be in a state of advanced pyelonephritis. Recovery was slow, but the child was ultimately discharged from hospital quite well, nearly five months after the nephrectomy.

Mr Page refers to five cases of ruptured ureter examined and proved post mortem, and to four cases diagnosed during life and treated successfully. He lays stress on the fact that rupture of the ureter, unlike rupture of the bladder, gives rise to no immediate symptoms leading to a suspicion of injury to part of the urinary apparatus.

Drainage through the loin is advised in the hope that should the rupture be incomplete, the aperture may close; should this fail nephrectomy may be considered. Were the ends of the divided tube evident anastomosis by suture would be indicated; it is, however, extremely difficult to find the lax tube in the living subject.

Chaput[8] reports two cases of inosculation of the ureters with the intestine. The first operation was for the relief of a uretero-vaginal fistula, and was completely successful; the second was performed for tubercular cystitis. The inosculation of one ureter with the colon was successful; but three months later when the other ureter was operated upon death followed from suppression of urine. In the latter case the tubes were greatly thickened and diseased.

His method is as follows: Having opened the abdomen by a curved incision in the iliac region and holding the intestines aside, the posterior layer of the peritoneum is divided for about 10 centimètres in a line parallel with the meso-colon. The peritoneum is reflected towards the vertebral column and the ureter sought for. The ureter is divided between clamps. The end of the renal portion is now brought to meet the colon at its posterior and lateral aspect at a very acute angle. A row of sutures is inserted uniting the serous layers of the two structures along the posterior semicircumference. The intestine is then incised and a row of sutures uniting the mucous layers of the posterior part passed (*Fig.* 46).

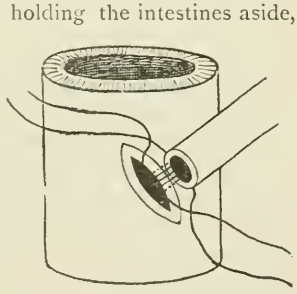


Fig. 46.—Suture of the mucous layer of the ureter and intestine.

The anterior lips are then brought into apposition by two similar lines of sutures—the first in the mucous, the second in the serous layers. Supplementary sutures are next passed at the extremities

of the intestinal incision which gapes a little. The end of the ureter and the incision are finally buried at the bottom of a fold of the intestinal wall by means of two rows of sero-serous sutures (*Figs.* 47 and 48).

The author recommends this operation : (1,) For inaccessible ureterovaginal fistula ; (2,) When the ureter is wounded high up ; (3,) After removal of calculus, if the ureteral wall is in such a condition that it cannot be united ; (4,) In certain cases of cancer and tubercle of the bladder ; (5,) In extroversion of the bladder.

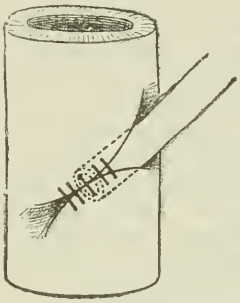


Fig. 47.—Point of anastomosis buried by infolding the intestinal sero-sac.

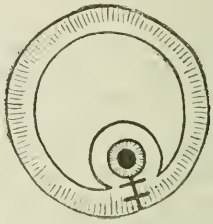


Fig. 48.—Transverse section of wound at the point of anastomosis, showing the infolded ureter.

The author concludes :—

(1,) The operation is an easy and favourable one and does not necessarily lead to hydronephrosis due to contraction of the ureteral orifice, nor to pyelo-nephritis due to ascending infection.

(2,) The bilateral operation can certainly be performed on man.

(3,) The passage of urine into the colon does not cause special inconvenience, and neither impairs digestion nor irritates the mucosa ; the stools are somewhat more frequent, but not more so than normal micturition.

(4,) The operation is valuable where more simple methods are inapplicable.

The operation should not be one of choice, but of necessity.

Adolfo Schwarz [9] has succeeded in removing the bladder and grafting the ureters into the urethra of bitches with the result that though at first incontinence was absolute, in about a fortnight after operation the animals began to make efforts at micturition, and after a few months were almost entirely continent. The post mortem examination revealed the fact that a new organ had developed pos-

sessing all the characteristics of the original bladder, and capable of fulfilling all its functions. A sphincter is also provided to the new bladder as a result of a hyperplasia of the muscular fibres of the upper part of the urethra.

REFERENCES.—[1] "Annals of Surgery," Sept. 1894; [2] "New England Medical Monthly," Aug. 1893; [3] "Annals of Surgery," Jan. 1894; [4] "Brit. Med. Journ.," May 12, 1894; [5] "Lancet," June 30, 1894; [6] "Annals of Surgery," Aug. 1894; [7] Ibid., May, 1894; [8] "Archives Générales de Médicine," Jan. 1894; [9] "Rif. Med.," July 3, 4, 5, 1894.

E. Hurry Fenwick, F.R.C.S.

Occlusion of the Ureters.—Robinson[1] from a series of experiments on dogs concludes:—

(1,) Complete occlusion of the ureter produces atrophy of the kidney, and partial occlusion, and hydronephrosis.

(2,) After weeks of complete occlusion the kidney will resume its function.

(3,) The kidney secretes until the pressure of the urine is higher than blood pressure.

(4,) Ligature of one ureter does not cause suppression on the other kidney.

(5,) Man has double the amount of kidney required for ordinary use; but when an emergency arises he needs both kidneys, and a man with one kidney is apt to die of pneumonia or other acute disease.

Suture of Divided Ureter.—Cushing[2] (Boston) cut and ligated the left ureter in mistake for a large blood vessel during hysterectomy for large myofibroma of the uterus. The mistake was discovered, the ligature removed, and the two ends sewed together again with silk and catgut sutures. The reunited ureter was dropped back into the pelvis, and an iodoform gauze drain was packed above the site of the suture and brought out through the abdominal wound, by the side of a glass drainage tube, which was also inserted to the bottom of Douglas' pouch. The patient did well, but urine commenced to escape along the gauze, and a fistula subsequently formed, which closed after nine months.

Implantation of Cut Ureter into Bladder after Abdominal Hysterectomy and Section of Ureter.—Dr. Charles Penrose[3] reports a case in which he excised one inch of the left ureter in performing abdominal hysterectomy for carcinoma of the uterus. He implanted the proximal end of the ureter into the body of the bladder, and stitched the peri-

toneum over the line of union. The patient made an unusually easy recovery, leaving the hospital twenty days after the operation.

Ureteral Calculi.—Mr. Whitehead[4] exhibited eleven calculi which he had removed from the lower end of the ureter of a female after dilating the urethra and the orifice of the ureter. Frequency of micturition was the only subjective symptom, but the presence of a comet-shaped tumour in the region of the bladder could be easily detected per vaginam.

Obstructive Anuria.—Wheelton Hind[5] adds a remarkable case to the rapidly increasing literature of operative attack for anuria dependent on impacted calculus in the ureter.

A gentleman, aged fifty, who had never had symptoms pointing to renal calculus, but who had been under observation for chronic rheumatic arthritis and acute gout, suddenly became unwell, with vague back ache and a feeling of *malaise.* He passed a smooth facetted uric acid calculus the same evening, and immediately suppression ensued. Dr. Hind diagnosed blockage of one ureter and incapacity of the other kidney. Beyond a questionable uneasiness of the right side there was no guide as to which side was blocked last. On right-sided nephrotomy being performed Dr Hind felt, impacted at the top of the ureter, a small bean-sized stone, which he removed, and subsequently cleared the pelvis of nine other facetted stones. Urine excretion was at once re-established, but forty-eight hours after the patient began to fail from cardiac weakness. On *post mortem* the incision into the right kidney was healing and the left was a mere shell, enclosing 360 grains of calculous material. At no time had his urine given evidence of blood—though it had been loaded with uric acid crystals, and contained a trace of albumen.

Mr. Vernon[6] details a case of complete suppression in a man aged sixty-three, who had had a sinus in the left loin running towards the vertebræ—not connected it was believed with the kidney. For two days he had been suffering from high temperature—sweating freely—and very severe general acute pains in the head and body, especially in the abdomen. All these symptoms had come on suddenly. The urine was scanty, high coloured, and contained albumen and pus. He was treated with calomel and diuretics. The third day he seemed better, but could pass no urine.

Six days after onset of illness, and on the third day of the suppression, the right kidney was opened. Its substance proved very rotten, and a large quantity of foul urine and pus escaped; a probe was passed in about ten inches, but no calculus was found. From the operation he rallied well, considering his weak and uræmic condition,

but died a week after from uræmia and exhaustion. The right kidney was acutely inflamed, three large acute abscesses being found in its upper portion. The pelvis and ureter were also acutely inflamed, and about half way down the right ureter a small phosphatic calculus was found. There was hardly any remnants of the left kidney; it contained no calculus, and under the microscope its atrophied tubes were completely blocked up with *débris*.

REFERENCES.—[1] "Annals of Surg.," vol. xviii., Oct. 4, 1893; [2] "Annals of Gynæc.," Dec., 1893; [3] "Annals of Surg.," vol. xix., p. 696; [4] "Brit. Med. Journ.," p. 68. part i., 1894; [5] Ibid., p. 960, part i., May 5, 1894; [6] Ibid., p. 1,304, June 16, 1894.

URETHRA (Caruncle of).

Leill treats urethral caruncles by the use of **Torsion** or **Excision**. The former operation presents the advantage of giving rise to a slight hæmorrhage; the latter operation gives most assurrance against a recurrence, and hæmorrhage is easily checked by a temporary tamponing of the urethral canal with a conical plug of styptic cotton.

REFERENCE.—"Therap. Gaz.," June, 1894.

URETHRA (Stricture of). *E. Hurry Fenwick, F.R.C.S.*

Scudder[1] reports twenty-eight cases of stricture and retention, which only admitted a fine guide, in which divulsion was practised. He states the mortality was about 1·9 per cent. He mentions that the operation is regarded by those familiar with it as accurate, easy, safe, and almost bloodless. In firm, tough strictures divulsion is contra-indicated. Those soft strictures, firm enough to cause retention of urine and which yield to very little force, are most suitable for divulsion. In the dense hard strictures of the anterior penile urethra, internal urethrotomy is the better operation. Mr. Fenwick has now notes of over a thousand cases of tight stricture of the urethra treated by all methods. He is convinced that many of the cases called "soft yielding strictures" are merely thin valves. These can be blown out flat with the inflating urethroscope, and a touch against their edge with a fine knife is sufficient to cause the restoration of the patency of the canal. 2 per cent. is the mortality of internal urethrotomy, and this latter procedure is a much more certain and surgical method than divulsion, which in Scudder's hand has a mortality of 1·9 per cent. The amount of damage done by a divulsor cannot be estimated until months after the operation, when re-contraction has taken place in the multiple radiating traumatisms produced by the divulsion.

Photography of the Living Urethra.—Dr. Kollmann[2], of Leipsic, has modified Oberlender's urethroscope so as to enable it to carry a small

camera, by means of which he has obtained some very strikingly clear photograms of the mucous membrane of the healthy and diseased urethra. These photograms are necessarily very minute in size, and for practical purposes they have to be enlarged.

The illustrations which are appended (*Figs.* 49—52), of granular

Fig 49.

Fig. 50.

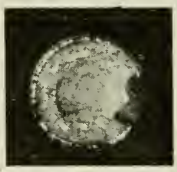


Fig. 51.

Fig. 52.

Photographs of living urethra.

urethræ, are introduced to demonstrate the feasibility of photography of the living urethra, rather than to illustrate its use as a practical clinical record. Dr. Kollmann's camera demands an exposure of three-quarters of a minute to a minute.

REFERENCES.—[1] "Journ. of Cut. and Gen. Urin. Dis." Oct., 1893; [2] Kollman, "Internat. Centralblatt fur Harn und Sexual Organe," Bd. ii., 227.

URTICARIA.

T. Colcott Fox, M.B.

In urticaria papulosa (lichen urticatus), F. H. Barendt noted that the distribution of the rash was commensurate with the skin area over which the child could wield his finger nails most readily, and in the majority of cases most effectually. He concludes from this that the lichen urticatus is the product of the patient's nails. The exiting causes are fleas and bugs acting on a system predisposed to the eruption by the warm season, by various exanthemata, or a nervous excitable disposition. The practical point in this view is to insist on the thoroughness of local treatment:—

(1,) Dust insecticide powder between the sheets and blankets and over the child's body.

(2,) Pare the child's nails and prevent access to the skin by a suitable night dress closed below with a running stitch and fastened behind. The hands sewn up.

(3,) Whole integument except face and scalp anointed at night with a mild antiseptic ointment, *e.g.*, acidi carbolici 1 per cent., or naphthol 2 per cent. in benzoated lard, and a warm bath given the following morning followed by a free dusting with equal parts of finely powdered oxide of zinc, venetian talc and rice starch.

(4,) Internal treatment is only given as occasion may suggest.

Hartzell successfully treated a case in a girl of six years by exhibiting internally **Salol** in 3-grain doses thrice daily and by applying a **Thymol Lotion** (½ grain to ℥j of water) for relief of pruritus followed by the use daily of an ointment of xv grains of **Creolin** in ℥ss each of **Lanolin** and **Petrolatum.**

In an article in the "Journ. de Méd. de Paris," April 22, 1894, the following indications for the treatment of urticaria are given. Firstly, the cause is to be removed, and, secondly, the symptoms relieved :—

(1,) It must be remembered that a large number of vegetable substances, food, and parasites, may occasion the disorder.

(2,) Those who consider the urticaria the result of a diathetic disorder of vaso-motor innervation will give **Quinine Disulphate,** grains iv twice daily, or **Ergotine,** grains v night and morning, or **Tincture of Belladonna,** gtt. x to xx each day, or **Atropine Sulphate,** gr. $\frac{1}{150}$ twice daily. Brocq combines these in the following pill :—

℞ Hydrochlorate of Quinine gr. j | Ext. of Belladonna gr. ss
Ergotine gr. j | Glycerine q.s. ft. pil.

Two pills for a dose.

If an arthritic diathesis exists **Alkalies** or **Bicarbonate of Soda** or **Vichy Water** are called for, or mild purgative alkaline waters.

(3,) If the digestion is at fault a strict regimen is necessary, and the following prescriptions are recommended :—

℞ Benzo-naphthol
Powdered Rhubarb | Calcined Magnesia āā gr. v

To be given in a cachet half a hour before a meal.

℞ Beta-Naphthol
Salicylate of Bismuth | Prepared Chalk āā gr. v

To be given after each meal if diarrhœa be present.

(4,) Where great nervous irritation exists **Hypnotics** may be administered.

(5,) As local applications the following are useful :—

Bath.—1 litre of vinegar and 1 of glycerine, with 2 drachms of corrosive sublimate added to the bath, given in a porcelain or wooden tub.

Lotions.—⅓ ether, ⅓ vinegar, ⅓ cologne water; corrosive sublimate and chloride of ammonium, of each 2 grains, cherry-laurel water 2½ drachms, distilled water to 8 ounces.

Powders.—Starch, oxide of zinc, salicylate of bismuth, with the addition of $\frac{1}{50}$ part of camphor. To be applied after the bath.

Salves.—Menthol or phenol in zinc cintment.

REFERENCE.—"Liverpool Med. Chir. Journ.," Jan. 1894.

Synopsis.—(Vol. 1894, p. 564.) High doses of **Strychnine**, 5 to 6 milligrammes daily for fifteen to eighteen days. Lotions of **Aromatic Vinegar** with 3% **Phenic Acid** or **Vinaigre de Pennés** diluted with 1, 2 or 3 parts water. Powder skin with **Talc** containing 1% **Salicylic Acid**. Application of **Oil of Sweet Almonds** with 5 to 10% **Menthol** or **Alcoholic Menthol Solution**. **Galvanic Current** and internal administration of **Strychnine** in neurotics. **Pilocarpine** may succeed after all else fails.

UTERINE THERAPEUTICS.

Polacco reports enthusiastically on the use of **Ichthyol** in gynæcology. The cases included eczema of the vulva, pruritus, vaginitis, vaginal cicatrices, erosions of the cervix, ectropion, hypertrophy of cervix, multiple lacerations of cervix, deep lacerations of cervix, cervical endometritis, subinvolutions, and indeed all the known gynæcological affections.

Eczema and pruritus were cured almost at once. In vaginitis the results were most prompt and gratifying, the ichthyol being applied on tampons in antiseptic glycerine solutions. For endometritis ichthyol is used in 10 to 20 per cent. solution, and not only cures for the time but prevents a return of the trouble. The drug was tried in some cases of metritis and parametritis; not more than 11½ grains were rubbed into the skin by means of a 10 per cent. ointment, and it was also applied to the vagina by means of tampons impregnated with the glycerine solution. After three or four days of this treatment, combined with rest in bed and the mild use of saline purgatives, convalescence set in promptly.

The drug is absorbed, is comparatively cheap, since it is used in 10 per cent. or at most 20 per cent. solution, does not permanently stain the clothing, has an odour which is easily disguised by volatile oils, and, unless used in conjunction with lanoline, never irritates the skin. Polacco concludes with the statement that ichthyol is the most potent analgesic known and adopted in gynæcological therapeutics of the day. It has a decided absorptive action upon exudations, manifested more rapidly when used in the early stage of the disease.

Albertoletti in the main agrees with the report just quoted, with the exception that he holds that ichthyol does not cause the absorption of exudation.

The experience of others, however, seems hardly to justify this eulogium.—ED.

Calombini states that cotton soaked in 5 or 10 per cent of the **Sulph-ichthyolate of Ammonia** in glycerine causes speedy disappearance of acute vulvitis with painful erosions. In vaginitis, tampons impregnated with this solution are equally efficient. In urethritis a

5 to 10 per cent. solution of ichthyol in water, when injected, caused prompt subsidence of symptoms. Cervical endometritis, with ulcers, was quickly cured in from six to eight treatments with tampons soaked in 10 per cent. ichthyolate in glycerine, while the same solution, carried in by means of gauze, wrapped round the body of a Playfair sound, cured endometritis of the body of the uterus. Where the cervix was insufficiently dilated to allow of this procedure, intrauterine injections were made by means of a Bozeman recurrent catheter.

REFERENCE.—"Therap. Gaz.," June, 1894.

Synopsis.—(Vol. 1894, p. 565.) Ichthyol externally and internally reduces congestion and pruritus. 5% solution Sulphichthyolate of Ammonia in Glycerine applied to vagina on tampons and ointment of Ichthyol and Lanolin rubbed into abdomen. Capsules, containing 1·5 millimètres, three times daily, and suppositories containing from 1 to 3 m. Thiol has no odour, smarts less than ichthyol and does not stain linen; 10 to 20% may be applied to cervical canal on tampons, and as ointment for inunction over abdomen. Potassium Permanganate as emmenagogue, ½ to 2 grs. three or four times daily, well diluted. Atthill injects Iodised Phenol after curettage, and often instead of the operation.

UTERUS AND VAGINA (Doubling of). *John W. Taylor, F.R.C.S. On Doubling of the Uterus and Vagina and allied Malformations.*—There can be no doubt that the malformations which may be included under this title (and in a certain proportion of these, the diseases necessarily consequent on malformation) are much less rare than was formerly supposed. Scarcely a month passes without some fresh report of a case in current medical literature, and I have myself met with eight examples. Some of these cases are of great clinical interest, and the questions involved in their diagnosis and treatment, the difficulties which they present both for patient and surgeon, are of such grave moment that a clearer and wider knowledge of the subject (if attainable) is really of high importance.

The defects of present teaching are two-fold. First, the subject has been unnecessarily complicated by minute distinctions and Latin phraseology, which, however valuable from the standpoint of the index, is of no value whatever to the practical surgeon; secondly, a method of instruction has followed this which takes but little notice of the clinical aspect of the cases met with, but confines itself to the pathological anatomy as ascertained by post mortem examination, when all the salient features of the (living) case have been obliterated. To make my contention plainer I have transcribed from one of our best text books (Winckel's "Gynæcology") eighteen varieties of malformation affecting the uterus only, each of these being due to a complete or incomplete development of a double uterus.

TABLE.

1.—Uterus unicornis sive ullo rudimento cornu alterius.
2.—Uterus unicornis excavatus cum rudimento cornu alterius solido.
3.—Uterus unicornis excavatus cum rudimento cornu alterius excavato.
4.—Uterus didelphys
5.—Uterus bifidus
6.—Uterus didelphys partim excavatus.
7.—Uterus bicornis partim excavatus.
8.—Uterus bicornis septus
9.—Uterus bicornis subseptus.
10.—Uterus introrsum arcuatus.
11.—Uterus introrsum arcuatus septus.
12.—Uterus introrsum arcuatus subseptus.
13.—Uterus planifundalis.
14.—Uterus planifundalis septus.
15.—Uterus planifundalis subseptus
16.—Uterus foras arcuatus septus.
17.—Uterus foras arcuatus subseptus.
18.—Uterus inequalis eximpedita evolutione unius lateris.

If to these were added the associated or non-associated malformations due to complete or partial doubling of the vagina the list might be extended much further. Such lists are only examination bugbears, and those who learn purposely forget them as soon as all immediate occasion for their remembrance has passed by. With this natural neglect too often the whole subject is lost sight of, and when a case presents itself the condition is unsuspected.

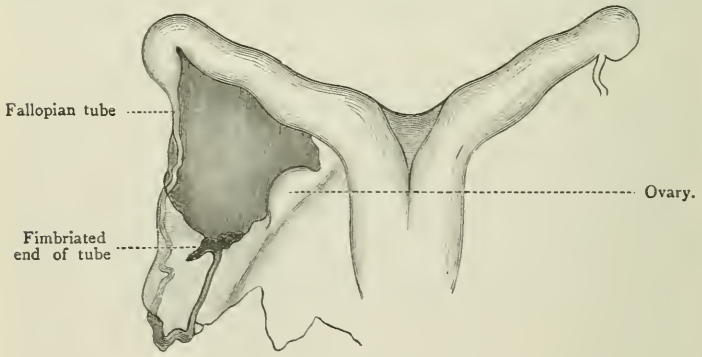


Fig. 53.—Double Uterus of Sheep.

Now, if a sure foundation of study has been laid by clear and definite outline-knowledge of the development, and comparative anatomy of the uterus, of its earliest double condition as separate Müller's ducts, and of its persistent double condition in most of the lower animals (as shown for example in *Fig.* 53), it will be only natural to

proceed from this to the consideration of those cases in which the double organ is not a passing phase of fœtal development, but a permanent condition of adult life, and by grouping these eighteen and more varieties under one heading—that of "double uterus and vagina"—we begin to make a somewhat chaotic mass of information intelligible and of some practical interest. The various malformations of this type assume a wider aspect. They form a connected series or group with special points of common interest.

Under this heading it is quite possible that any practitioner may meet with one or more cases in his practice. In the title or name itself, double uterus and vagina, he has a sure guide to interpret most of the difficulties that such cases present, and it conveys moreover a settled idea of the common origin and true association of these deformities which may be altogether wanting when cases are studied singly.

The idea is of course not an original one. "Verdoppellung des Genital-Kanals" is a term of frequent use in recent German literature, and in at least one of the newer German text books (Duhrssen), it forms the distinctive heading of the section devoted to these malformations. The advantage of treating the subject in this way is so evident that the example may, I am sure, be profitably followed in England.

The clinical aspect of this subject—its bearing on disease—may be considered from either a gynæcological or an obstetric standpoint.

From the former, one may trace the vaginal septum as an occasional obstacle or difficulty in married life. When operation is called for on account of this, there can be no doubt that thorough removal of the septum to a convenient height by division of both anterior and posterior attachments, with careful suture of the the wounds, will yield the best results. I know of one case in which the septum was simply divided along the anterior attachment, leaving an awkward tag of tissue hanging from the posterior vaginal wall.

Again, one-sided development of the uterus with absence of the uterus on the other side—a condition sometimes found when the vagina itself is absent or rudimentary—may, with its accompanying distended Fallopian tube, cause a tumour confined to one side of the abdomen, which is very likely to be mistaken for a small ovarian cyst. Especially is this the case when the vagina is wanting. Examination in the middle line, between the bladder and rectum, may reveal no trace of any intervening organ because the uterus is one-sided, and the latter may easily be considered as absent altogether. Such a condition when associated with menstrual retention (as in a case

which I reported last year) will of course need abdominal section for its cure.

Perhaps the most important disease arising from this type of malformation is the large retention tumour, formed by the collection of menstrual fluid or pus in one-half of the double uterus (or uterus and vagina) when the channel below is incomplete.

An excellent illustration of this condition—which I have taken the liberty of copying from Duhrssen's little manual—is shown in the accompanying figure (*Fig.* 54), and exactly portrays the leading features

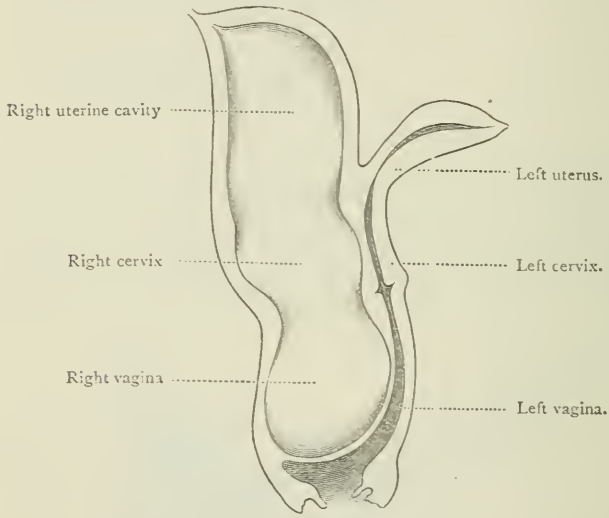


Fig. 54.—Double Uterus: Retention Tumour formed by collection of blood in the right uterus and vagina.

of one of my own cases. I need not tarry to point out the gravity of such a case and the urgent necessity for correct diagnosis and treatment.

The diagnosis is often a difficult one, and suspicion of the true condition is not entertained because menstruation is occurring regularly from the open half-uterus or womb of the other side. The treatment is usually simple ; free opening is made into the closed vagina, and the retained fluid is evacuated.

But if the reports of published cases are carefully followed it will be found that in many (if not in most) cases a mistake is made in doing this, which may be easily avoided if definite teaching be given. The

opening must be a permanent one, and this is only to be obtained by *sewing the mucous membrane of the closed vagina to the mucous membrane of the open side* all round the incision.

From the obstetric standpoint the subject is scarcely less important. As is well-known, a double uterus appears to be no bar to pregnancy, and I am inclined to think that the generally accepted belief that menstruation may sometimes continue throughout pregnancy is solely due to the occasional occurrence of pregnancy in one-half of a double uterus.

Associated with early pregnancy of one side, the irregularity of the resulting tumour is sometimes a cause of anxiety and doubt. In the later stages of such pregnancy, and when labour has set in, the difficulties which may arise, although not usually attended with danger to the patient, may be very distressing to the practitioner, especially when he has no previous knowledge of the patient, and makes his first examination to decide the question of a normal presentation. Such a case I have myself described in which the fœtus occupied the right uterus and vagina (*Fig.* 55). The patient lying in the usual obstetric position on her left side was examined by the practitioner, whose finger naturally passed into the left vagina. The palpable presence of a child within the abdomen yet outside the examined uterus, which was not even dilated, was at first suggestive of extra-uterine pregnancy at term. Happily the condition was finally made out. But it might easily happen that the surgeon in such circumstances, in perfect good faith and with all due gravity, might propose and make ready for an urgent and dangerous operation while the infant was being born naturally under the care of the nurse. The disagreeableness of such a possible error is obvious to everyone.

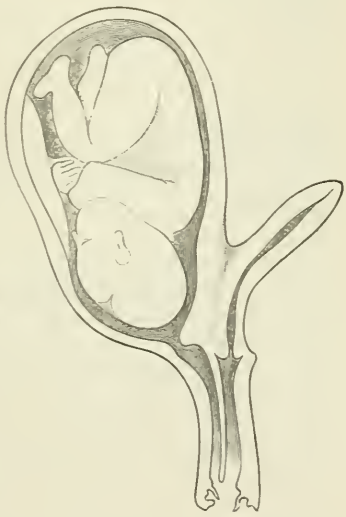


Fig. 55.—Double Uterus and Vagina: Pregnancy in right uterus (diagrammatic).

Now if such practical difficulties may be met with, by one surgeon, and I only speak of what I have myself witnessed, it seems to me

that the whole subject of doubling of the uterus and vagina is worthy of more attention, of better teaching, and of more careful remembrance than is usually accorded to it.

I believe the study of such malformations may be simplified and made both interesting and practical by a more comprehensive method. If the student remembers only the title of this paper as inclusive of various allied deformities, and with that possesses a mental picture of such illustrations as those which I bring before his notice, he will, I think, be better equipped for the practical recognition and treatment of a case than he is under present methods of teaching by divided cases and single pathological curiosities.

VAGINITIS.

Synopsis.—(Vol. 1894, p. 573.) R Glycerine, Tar Water, āā, ʒijss; Zinc Sulphate, gr. xij; Copper Sulphate, gr. iij; Alum, gr. vj; Soda Chlorate, gr. iv; Essence of Wintergreen, gtt. xx. As injection, **Pure Petroleum** injections 100 to 150 grms. daily.

VAGINODYNIA.

Synopsis.—(Vol. 1894, p. 576.) Between attacks **Belladonna, Viburnum, Valerian,** and **Conium**; **Morphine** being the most efficient.

VARICOCELE.

Sebileau, after giving the ordinarily accepted indications for operation in case of varicocele, remarks that the same method of treatment is not suitable for all cases. When the varicocele is small, the dilated veins being of normal consistence and regularly distended, simple **Resection** of the scrotum is followed by the best results, although in combination with this there should also be resection of the lower segment of the posterior group of veins. When, however, the enlarged veins are of great size, extend the whole length of the cord, and are partially dilated, indurated, and knotted, a double operation is necessary, that is, not only is it essential to resect the scrotum and excise the posterior funicular group, but the anterior group must also be operated upon. As palliative means in the non-operative cases, cold douches to the region of the scrotum and perineum are recommended. For these douches, 1 per cent. **Tannin Solution** is advised; wearing a suspensory bandage and careful attention to the condition of the bowels are also insisted upon as cardinal points. Resection of the scrotum is a safe operation, the author holds. The parts are prepared as for ordinary surgical intervention. The redundant tissue is pinched up, seized in a clamp, and cut off. Only enough to cover the testicle is left. After resection the clamp should be removed, hæmorrhage checked, and the wound sewed without drainage.

Koehler[2] holds that the method of choice consists in exposing the veins by free incision, isolating them, and tying each one separately high up and low down, the portion between these ligatures being excised. This excision should be combined with an operation having for its end shortening of the scrotum. This end is easiest attained by tying together the ligated vein ends above and below; then the vertical skin wound is stretched laterally so that it becomes tranverse, and the wound is sewed in this position.

REFERENCES.—[1] "Gaz. de Méd. de Paris," Feb. 24, 1894; [2] "Berlin. klin. Woch.," No. 50, xxx., Jahr.

Synopsis.—(Vol. 1894, p. 578.) R Tinct. Hamam. Virg., gtt. xx; Aq. Dest., ℥vj; M. Tablespoonful doses, taking the whole within twenty-four hours.

VARIOLA.

Richardiére[1] has obtained satisfactory results from the use of **Mercurial Baths** and **Inunctions**. The patients are bathed twice a day at regular intervals. The bath must have an ordinary temperature, —that is, from 33° to 35° C.,—and must be of a duration of fifteen minutes. Each bath must contain 10 grammes of **Corrosive Sublimate** dissolved in alcohol. These baths are given twice a day up to the time when the body temperature has declined definitely, or just up to the end of the suppurative stage of the malady. During the period of desiccation one bath every twenty-four hours is sufficient. After the crusts begin to fall off, the mercurial is substituted by a simple bath containing some **Boric Acid** in solution. The mercurial baths act upon the pustules of the trunk and extremities, but not upon those of the face. The latter are best treated, according to the author, by the following method: The head and face of the patient are covered by muslin bandages that have been previously dipped in a solution of corrosive sublimate of the strength of 50 centigrammes to the litre. A sort of helmet or casque is formed with this bandaging, leaving intact, of course, the natural openings, *i.e.*, the eyes, nose, and mouth. The bandage is allowed to remain during the course of the disease, and after its first application is simply wetted several times a day with the mercurial solution, without removing it. This method is of great value and is well borne by the patients. The author affirms that cases of small-pox treated in this manner do not exhibit any of the forms of dermatitis or vesicular eruptions which often follow the local application of mercury. In the cases reported a milk diet was strictly observed; ordinary diet was only allowed two or three days after the body temperature had assumed a normal

character. No remedial agent was administered internally, and only in adynamic cases was stimulation resorted to.

Finsen[2] has made observations on the effect of light on the skin. He referred to the good results obtained by Black and others by the exclusion of daylight in the treatment of small-pox, but argued that, as Widmark has shown that it is the ultra-violet rays which have the strong chemical action, it is not necessary to exclude the daylight, but by using red curtains tightly drawn, or red window panes, the injurious effects of the light can be prevented. The correctness of this hypothesis was proved by Svendsen, of Bergen, who last summer treated four cases of small-pox in unvaccinated patients by covering the windows with thick red woollen curtains. The patient escaped the suppurative stage; there was no rise of temperature, and no œdema. The patients passed from the vesicular stage, which was slightly prolonged, into convalescence, and escaped scarring.

REFERENCES.—[1] "L'Union Médicale." [2] "Therap. Gaz.," March, 1894.

VEINS (Varicose).

Synopsis.—(Vol. 1894, p. 578.) Strapping, Massage, Subcutaneous Ligature and Excision.

VERRUCA.

Synopsis.—(Vol. 1894, p. 579.) Curette, Fuming Nitric Acid, or Tinc. of Thuja Occidentalis locally applied; also: ℞ Sublimed Sulphur, ʒv; Pure Concentr. Acetic Acid, ʒijss; Glycerin, ʒij. Apply for several successive nights, covering warts with flannel smeared with soft soap. Resorcin or Salicylic Acid, 10 to 20% dusting powder for exuberant vegetations. Equal parts powdered Savin and Salicylic Acid or Powdered Savin and Alum applied twice or thrice daily, cleansing before the application with 1 in 1000 Corrosive Sublimate Solution. ℞ Hydrarg. Bichlor. gr. v; Ac. Salicyl., ʒj; Collodion, ʒj. One application daily until about four have been made. Tincture of Iodine, internally, 10 drops twice a day for an adult. Liq. Arsenicalis, ♏ 1 to 3. Painting with pure Carbolic Acid every four or eight days for anal or vulvar warts.

VERTIGO.

Synopsis.—(Vol. 1894, p. 580.) Potassium Iodide, 30 to 90 grains daily, long continued when due to arterial fibrosis.

VESICULITIS (Seminal). *E. Hurry Fenwick, F.R.C.S.*

Fuller contends that the seminal vesicles are not infrequently attacked by inflammation of an acute, subacute, and chronic grade. Usually gonorrhœa is either the direct or the remote cause. Most of the cases dependent upon this cause are subacute or chronic, and come on some time after the acute stage. In a small number of cases masturbation, or sexual excess, or both combined, are the cause of a

simple vesiculitis. As regards the specific forms, tubercle, or, more rarely, malignant disease commencing in the epithelium lining the vesicles, may be the causes of the affection. During a period of one year and a half the author has had twenty cases under his observation. In the simple variety of vesiculitis symptoms of disturbances of the sexual function are constant. In the majority there is a marked diminution of the sexual desire, or it may have disappeared. In a small minority the desire is increased. In some, erections are almost absent, while in others they are persistent. The act of ejaculation is very precipitate, or it may be tardy and accompanied by much pain, and followed by pain in the perineal region. Seminal emissions are also frequent. The amount of fluid ejected is small, and the spermatozoa are lifeless and reduced in numbers. In the gonorrhœal cases pus is present in considerable amount, more than in the simple cases not due to gonorrhœa. Blood may be present in varying amount. This may give rise to a greenish colouration owing to the oxidation of the hæmoglobin. A considerable amount is characteristic of the very acute cases. Functional derangements of micturition may or may not occur. The patients are often very neurotic individuals. Sharp pain may occur in some during evacuation of the bowels. In acute cases the temperature is raised. When due to tubercle the disease often follows tuberculous involvement of the neck of the bladder or of the epididymis, and is then painful only when the vesicle becomes much distended. In order to make sure of the diagnosis the seminal vesicles must be examined *per rectum* when the bladder is full, one finger being introduced through the anus while with the other hand pressure is applied to the hypogastric region. By this means the lower half of the vesicle can be felt. If diseased it will be distended and tender to the touch. especially in the acute cases. By pressing on the vesicle and drawing the finger along it some of its contents can be pushed into the urethra, and on urination they can be collected and examined.

Treatment.—In treating these cases the author recommends in the simple ones, if acute, palliative measures, such as rest in bed, opiates, and large hot poultices to the inguinal region of the side with the involved vesicle. In rare cases perineal incision or aspiration may be requisite. The testicles should be supported and the treatment for gonorrhœa carried out. No injections must be used. In chronic cases, in addition to general treatment by tonics, etc., digital pressure along the affected vesicle should be carried out about once a week, or not oftener than every fourth day. Care must be taken to prevent hæmorrhage into the vesicular sac or the setting up of acute

inflammation by not applying pressure too vigorously or too often. In numerous cases these measures will effect a cure, Sexual intercourse should be prohibited during active treatment. In tuberculous cases, when the general condition allows it, complete extirpation must be practised. The same treatment is adopted in malignant cases when diagnosed sufficiently early.

REFERENCES.—"Journ. of Cutan. and Gen. Urin. Dis.," Sept., 1893, Epitome, "Brit. Med. Journ.," Oct. 23, 1893.

VOICE.

Synopsis.—(Vol. 1894, p. 581.) **Hot Water Drinking** before each meal, **Carlsbad Sprudel Salt**, avoidance of irritating foods and drinks—ice water, alcohol, and tobacco. Sleep and exercise in sufficiency; avoidance of close rooms and narcotics. **Nasal Douche of Warm Water** with **Lime Water** and **Peroxide of Hydrogen.** Cleaning teeth and using an antiseptic gargle after every meal. The foregoing hints are for singers, etc.

VOMITING. (See also "Hæmatemesis.")

Humphries employed **Nitro-glycerine** systematically for three years in all forms of vomiting, with highly satisfactory results. In cases of gastric catarrh in the adult or in the infant, acute or chronic, dependent upon alcoholism or upon anæmia, it acted almost as a specific; it also proved useful during pregnancy. In peritonitis alone it increased the vomiting, but the effect soon passed off. It proved of little value in the relief of the vomiting of pulmonary tuberculosis.

REFERENCE.—"British Medical Journal."

Synopsis.—(Vol. 1894, p. 581.) **Strontium Bromide**, 30 grs. daily, for vomiting of pregnancy, hysteria, acute gastric catarrh, etc. **Nitro-glycerine** almost specific for vomiting of gastric catarrh, pregnancy, and some cerebral cases, but aggravates in peritonitis, and in phthisis and influenza it seems inferior to **Atropine.**

VULVO-VAGINITIS (in Children).

Rocaz calls attention to several direct consequences of this condition, such as ulceration of the labia, purulent conjunctivitis and otitis, and joint affections. The general health may be seriously affected. Peritonitis may result through extension of the inflammation, several cases having been reported in infants. It is probable that the endometrium is liable to become infected in girls at puberty, from a latent vaginitis of long standing. In regard to the local treatment the writer calls attention to the fact that the ordinary applications, astringents, antiseptics, etc., relieve but do not cure the affection, since they do not reach the seat of the trouble within the vagina. Medicated crayons containing, iodoform, salol, thallin, etc., are not only painful to the little patient, but may cause added irritation.

He employs vaginal injections of **Permanganate of Potassium**, beginning with a solution having a strength of 1 in 4000, and increasing it up to 1 in 1000. The child is placed on her back across a bed and a rubber male catheter is introduced into the vagina, through which is injected a pint of the solution. The operation is not painful and is well borne by the patient. A slight increase in the discharge will be noted at first, but it soon begins to diminish and disappears entirely within from two to four weeks, during which time the injections are repeated thrice a week. Several successful cases are reported.

REFERENCE.—"American Journ. of Med. Sci."

WARTS.

For the removal of warts Dr. Morison perscribes the following :—

℞. Hydrarg. Bichlor. grs. v Collodion ℥j
Ac. Salicyl. ℈j

He sometimes increases the bichloride of mercury to 30 grains in the same amount of collodion, if the milder application does not answer. It is applied every day once, the upper crust of the previous application being removed before a fresh one is made. Four such applications generally soften the wart to such a degree that gentle traction removes it painlessly, the further dressing being any simple ointment.

REFERENCE.—"Med. Record," Mar. 7, 1893.

WEIL'S DISEASE.

Freyham discusses this subject after relating the following typical case. A man, aged thirty-two, was suddenly seized with shivering, fever, headache, followed by semi-coma. On the next day jaundice was noticed. On admission the tongue was dry and coated, the temperature 38·9° C., and the pulse 100. The urine was dark in colour, contained bile pigment and a trace of albumen, some hyaline casts, and a few red and white cells. The liver and spleen were both enlarged. The stools were loose and passed unconsciously. The fever terminated by lysis in a few days, the other symptoms disappearing at the same time. Severe pains in the calves were noted, especially at this time. Men, says the author, are more often attacked than women. Sometimes relapses occur, the former symptoms reappearing, but rarely in such a severe form. The pulse rate is usually high, but during convalescence it is infrequent, probably owing to the presence of bile constituents in the blood. Severe cerebral symptoms are rarely absent. Jaundice is the most constant symptom. The hepatic enlargement is not always present, the spleen being more often affected. The nephritis is to be looked upon as toxic in nature as in

the other infective processes. Muscular pains, supposed to be due to a myositis, are almost always present. The prognosis is good. Neither morbid anatomy nor bacteriology has as yet given definite information as to the exact nature of the disease. It may be difficult to distinguish it from enteric fever in the first few days, and it has been looked upon as abortive enteric fever with jaundice, but the typical lesions of this latter disease have never been found. The resemblance to acute yellow atrophy is quite superficial, and it differs from septicæmia in several ways. From infective jaundice the difficulties of diagnosis may be great. The author then refers to the infective theory of simple jaundice with special reference to epidemics, but he does not believe that a single cause can account for all such cases. Those believing exclusively in the infective origin of jaundice look upon Weil's disease as only a severe form of this affection. The clinical picture of catarrhal jaundice, even when accompanied by fever, is very different from that of Weil's disease. The relation of Weil's disease to typhus biliosus, endemic in Egypt, is then discussed. Some have looked upon it as the sporadic form of this disease. Only the discovery of the specific agent will settle the question.

REFERENCE.—"Brit. Med. Journ.," Epit., February 24, 1894.

WHITLOW.

Synopsis.—(Vol. 1894, p. 581.) Poultice of **Bread Crumbs** and **Lead Water.**

WHOOPING COUGH. *J. Madison Taylor, M.D., Philadelphia.*

Dr. P. Baron[1] warmly commends the use of **Quinine**, and especially if acute lung affections complicate the case. He thinks it should be determined whether it could be used as a prophylactic. The single dose is $\frac{1}{6}$ grain of the hydrochlorate for each month, and $1\frac{1}{2}$ grains for each year of the child's age, given three times a day, preferably at 6 a.m, and at 2 and 10 p.m. Strong children require a larger dose, but a larger dose than $6\frac{1}{2}$ grains to children over four years is generally not required.

For whooping-cough in an infant[2]:—

℞. Sulphonal gr. j | Syrupi Tolutani
Creasoti ♏ij | Aquæ āā ℥ij

Misce et fiat mistura. 2 teaspoonfuls to be given every two hours.

A bromoform mixture for whooping-cough[3]:—

℞. Bromoformi ♏xvj | Glycerini ℥xij
Spiritus Rectificati ℥ij | Tinct. Cardamomi Comp. ℥ij

Mix in the order given. A teaspoonful to be taken every six hours.

Bromoform[4] may cause toxic symptoms unless care be observed in its administration. The last dose in the bottle may, owing to the weight and insolubility of the drug, contain an excess, no matter in what way it may be suspended. This last dose, therefore, should be thrown away, or the drug supplied in a pure form, the nurse being instructed to supply each dose separately.

Nitrite of amyl[5] is suggested to relieve paroxysms of whooping cough.

℞ Amyl Nitrite	♏ 24	Alcohol	ʒiij
		Glycerine	q.s. ad ʒj

A dose is a teaspoonful for a child of ten years, and it is claimed that if given immediately before a paroxysm it will greatly assist in relieving it.

REFERENCES.—[1] "Berliner klinische Wochen.," No. 48; [2] "Therap. Gaz."; [3] "Practitioner;" [4] "Brit. Med. Journ.," Jan. 6, 1894; [5] "Med. Age," Oct. 2, 1894.

WORMS.

Synopsis.—(Vol. 1894, p. 581) In thread worms keep up aperient action for some weeks by **Castor Oil, Rhubarb, Sulphate of Magnesia**, etc. Irrigating by Hegar's apparatus in obstinate cases, using pure water. **Soap Enemata.** Tonics, **Iron**, with **Nux Vomica** or **Strychnine**; boiling of milk and drinking water; cleansing of all articles of diet and thorough cooking of meat. White sugar in preference to brown. Nails to be kept short and often brushed. Frequent washing of the body with carbolic acid soap.

XANTHOMA.

T. Colcott Fox, M.B.

Fox presented to the New York Dermatological Society two patients in whom he had cured patches of xanthoma palpebrarum by **Electrolysis**, using a strength of 1 to 3 milliampères for the duration of one minute. Elliot also spoke of two successes by this method. There is no mention of the extent of any consequent scarring.

Besnier, in the course of a discussion, stated that he had observed the disappearance of a generalized eruption of xanthoma in two cases during the administration of **Phosphorus**.

YELLOW FEVER.

Salicrup believes that when called to a case of yellow fever in the first day of the disease, 10 to 15 grains of **Calomel**, followed by a saline cathartic three hours afterwards, should be prescribed, and as soon as the cathartic effect begins the patient should take a cupful of hot lemonade, with 5 to 10 grains of **Bitartrate of Potassium** every hour until abundant perspiration is produced; this is to be kept up by the constant use of lemonade and confinement to bed for two or three days, at the end

of which time the fever generally subsides, and in many cases convalescence is established. No food is given during these days, and nothing but small pieces of ice in the mouth is allowed to quench thirst. In cases in which convalescence is not established at once, the symptoms of the third stage appear after twelve to twenty-four hours, but generally they are less severe and the majority of cases recover.

When the disease advances into the third stage the symptoms are treated on general principles. To prevent or check vomiting, pieces of ice swallowed entire, iced champagne, effervescing mixtures prepared with fresh lemon-juice, sulphuric and hydrochloric lemonades, and diluted hydrocyanic acid proved useful in many cases. The **Salicylates of Sodium** and **Potassium, Benzoate of Sodium,** and **Quinine** have been used in cases of the inflammatory type. **Castor, Musk,** or other antispasmodics are sometimes indicated when the nervous system is much disturbed. When the stomach is tolerant and stimulation is required, **Alcohol** and extract of **Cinchona Bark** combined is a very useful preparation.

Besides these, other drugs have been used according to the indications. In cases of recovery, convalescence is slow and protracted, even in cases in which the disease only goes through the first stage, and the patients remain in a state of chloroanæmia, which takes long to disappear.

Salicylic Acid and its preparations are said to have been used successfully as a prophylactic of the disease by some captains of merchant vessels, who administered the acid to their crews in 5-grain doses, three times a day.

REFERENCE.—"Therap. Gaz.," December, 1893.

[*Received too late for alphabetical arrangement.*]

The Treatment of Diphtheria by Anti-Toxic Serum.

M. ARMAND RUFFER, M.A., M.D.

During the last eighteen months the attention of the medical profession has been drawn to a new line of treatment discovered by Professor Behring, of Berlin. This method is interesting chiefly for two reasons, firstly, because in it we appear to possess an efficient remedy against a disease which up to the present moment has been met with very inadequate weapons; and, secondly, because it is a second instance in which bacteriological methods and facts through experimentation on animals are being applied to the cure of human beings. Since the application of Lister's method, the advances which have been made in bacteriology have been chiefly of a prophylactic nature. We have been able to arrest an epidemic of anthrax, quarter evil, etc., by means of preventive inoculations, but whenever infectious disease had actually broken out we had to resort to the old empirical and extremely inefficient therapeutic measures, and in no disease has this been the case more markedly than in diphtheria. To give a list of the drugs and of the methods which have been employed would fill more than the space placed at my disposal, but I can shortly sum up the whole matter by saying that up to the present moment the mortality abroad and in England among young children below ten years of age, has varied from 40 to 90 and more per cent. It is the duty, therefore, of every medical man to examine carefully any method which gives us hope of reducing this mortality, even by a little, for a decrease of 25 per cent. would mean a saving of several thousand lives in the year.

We may first consider on what principle the method invented by Behring, and perfected by himself and others, has been based. One knows that diphtheria is caused by a specific bacillus, which was first discovered and isolated by Löffler. Several years after this discovery in 1887, two French observers, Roux and Yersin, showed that the poisons secreted by the diphtheria bacillus in artificial cultures, when injected into lower animals, produced all the symptoms of diphtheria,

and that in man the general symptoms attending this disease were due to the absorption of these poisons.

In 1890 Behring published his remarkable discoveries on the action of the serum of immune animals on the diphtheria poison. He found that the serum of a guinea pig, which had been artificially protected against diphtheria, had the power of saving any animal when it was injected at the same time with a fatal dose of the diphtheria poison. He saw, moreover, that by successive inoculations he could produce a serum of great therapeutic action. But in order to apply this treatment to man it was evident that to obtain a sufficient quantity of serum in due course, larger animals would have to be used; hence, sheep, goats, cows and other large animals were artificially immunised for this purpose. But one soon found that the best animal to use was the horse, because it could not only resist, without showing any symptoms of discomfort or illness, large doses of the diphtheria poison, but very large quantities of serum could be withdrawn from time to time.

The immunisation of the horse, as carried out by Messrs. Robertson, Nolan and myself at the British Institute of Preventive Medicine, for the treatment of children in Great Britain, has been conducted as follows :—

A horse, young if possible, is chosen, or at any rate one that is to all appearance perfectly healthy. It is in the first place kept under observation for a week so that it may be properly fed up, and it is then tested with mallein in order to be quite sure that it is not suffering from chronic glanders. When the horse is in perfect health a small quantity of a filtered culture of the diphtheria bacillus, viz., a quarter of a cubic centimèter is inoculated under the skin. This of course for an animal as large as a horse is an extremely small dose, and yet one finds that even this minute quantity often causes a swelling as large as a fist in some animals, but has never produced, as far as I know, any serious constitutional symptoms. It is often accompanied also by a rise of temperature of 1 degree, which lasts from six to eight hours. The next day, however, the animal as a rule appears to be in perfect health. After three or four days have elapsed another quarter of a cubic centimèter is injected in the same way. This, then, produces no symptoms whatever. At the end of the first week one cubic centimèter is inoculated, and, if it is not accompanied by any constitutional disturbance, that dose is repeated three times during the second week. Five cubic centimèters are injected three times during the third week, and in this way the dose is raised from time to time, until at the end of six weeks or so the animal receives a hundred

cubic centimèters three times a week. The first horse which I immunised has received over two litres of toxine, it has been bled five times, and is now in far better condition than when it was purchased. It is of the utmost importance that the animals should be kept in perfect health and in the best possible condition during that time. The treatment, if properly carried out, should never give rise to any signs of pain, discomfort, or illness in an animal so treated, and although I have been able to immunise over twenty horses in this way, I have never seen one show any serious symptoms.

The horse being thus immunised, the next step is to bleed it for the treatment of children, and it is fortunate that the bleeding of horses is an extremely simple and painless operation. The jugular vein in this animal is extremely long, and runs in the jugular groove just under the skin. A halter is put on the horse's head and if it be at all restless a turnip or carrot is given to the animal to eat. A previously sterilised cannula is then introduced directly into the jugular vein, and the blood is allowed to flow through an india-rubber tube into previously sterilised bottles. In this way six to fifteen litres of blood may be drawn off without the animal showing any signs of weakness or discomfort. The cannula is then withdrawn, and owing to the elasticity of the walls of the blood-vessel no ligature or pressure is necessary. The walls of the vein close over the opening made by the cannula, just as a needle may be put through the intestine of a man without any of the contents escaping. The blood thus withdrawn is then left in ice until the serum is quite separated, and when this has taken place the serum is poured off, with all aseptic precautions, into sterilised bottles, which are then corked with sterilised corks, and sealed. A piece of camphor is generally added in case any micro-organisms from the air should have fallen into the serum during the manipulations. In order to ensure absolute safety one or more of the tubes are placed in a warm chamber at 38° centigrade for twenty-four hours, and if no bacterial growth has taken place we may be sure that the serum is quite aseptic.

Before the treatment can be applied to children it is necessary to know what is the anti-toxic power of the serum, and in order to do so, known quantities of the serum are mixed with known quantities of diphtheria toxines of a certain strength and injected under the skin of a guinea-pig. If enough serum has been added no symptoms whatever should follow, and the quantity necessary to prevent the occurrence of symptoms will necessarily depend on the strength of the serum. Thus the serum of one of our horses is of such strength that ·0001 c.c. of it will neutralise a dose of toxine which would otherwise

prove fatal to a guinea-pig in twenty-four hours. Of course it will all depend on whether the serum is inoculated at the same time as the toxine or some time afterwards. Thus, if ·0001 c.c. will save a guinea-pig if injected at the same time with the toxine, ·5 c.c.—that is 5,000 times that dose—will be necessary if eleven hours be allowed to elapse from the injection of the toxine to the inoculation of the serum. It is obvious, therefore, in a child which has been ill for some days a far larger quantity of serum is necessary, and hence one finds that the dose necessary for a child varies from 5 to 20 c.c. according to the severity of the case, and the length of time which has elapsed since the onset. Experimentally, moreover, it has been established that if one waits too long before the introduction of the serum no amount of serum will save the animal, and the same is the case in a human patient.

Before we come to the results which have been obtained by this method, it is necessary to point out one cause of error which affects all statistics on diphtheria. One finds that a great many cases which are certified as diphtheria and are admitted into hospitals, are, as a matter of fact, not diphtheria at all, as the specific bacillus cannot be found in them. Such cases nearly always recover, and if one were to include them in the statistics of diphtheria cases treated by serum, the mortality would appear to be far too low. It is necessary, therefore, before the value of treatment can be established, to examine each case so treated for the diphtheria bacillus. This should be systematically carried out when the anti-toxic treatment is being tried.

The first statistics which we possess as to the value of the treatment are those published by Ehrlich, Kossel and Wassermann. They are as follows:—Number of cases, 220; recoveries, 168; deaths, 52; or 76 per cent.

If we divide these cases according to the time which had elapsed since the onset of the disease to the time when the patients were inoculated, we get the following results:—

Day of Disease.	Number of Cases.	Cures.	Deaths.	Cures per cent.
1st	6	6	0	100
2nd	66	64	2	97
3rd	29	25	4	86
4th	39	30	9	77
5th	23	13	10	56·5

Total mortality, 23·4 per cent.

The mortality in the same hospital had always been considerably higher, but when serum was used it fell, as we have seen, by about one-half.

Similar and even better results have been obtained by the use of the serum, but I may perhaps be allowed to refer shortly to cases nearer home.

In England Dr. Washbourn, Dr. Goodall and Mr. A. H. Card have inoculated eighty-two consecutive cases in children under fifteen years of age, and which had been certified as suffering from diphtheria. Diphtheria bacilli were found in sixty-one. The percentage of cases that were not true diphtheria was thus 23·75 per cent., this number closely corresponding with Dr. Roux's percentage. In one of these cases of croup there was no exudation upon the fauces, yet a bacteriological examination revealed the presence of diphtheria bacilli. There were eleven cases which presented on admission a clinical aspect of true diphtheria and in which no diphtheria bacilli were present. I need not enter into the other bacteriological details, for which I can refer readers to the original paper. The serum was injected in nearly every instance in the subcutaneous tissue of the flank with all due antiseptic precautions. If we eliminate eight cases which, according to the authors, were not clinically diphtheria, although they had been certified to be so, seventy-two cases remain, of which fourteen died, which gives a mortality of 19·4 per cent. The mortality among children under fifteen admitted into the same hospital during 1893, when no serum was employed, was 41·8 per cent., and during 1894 up to October 22nd, thirty-six, that is, a mortality of 38·8 per cent. Of the seventy-two cases immediately preceding those treated with anti-toxine, twenty-eight died, a mortality of 38·8 per cent. There is thus a marked difference in the mortality of the cases treated with anti-toxine and those not so treated—in fact the one is just half the other.

In the opinion of Dr. Goodall, who is most familiar with the nature of cases admitted into the hospital, the cases treated with anti-toxine were rather above than below the average severity. During the same period the mortality remained very much the same as before in all the hospitals of the Metropolitan Asylums Board, in which no serum was employed. Since the publication of Dr. Goodall's paper, however, five other hospitals have been supplied with serum, and I have been informed by several of the superintendents that the results have been most satisfactory.

I may remark here that the deaths which I have given above, occurring in patients treated with serum, include every case, but I may say that three of those patients really should not be included in the mortality. Thus, one patient was on admission also the subject of scarlet fever, and died of dyspnœa some days after tracheotomy. At

the post mortem examination it was found that the lower end of the tracheotomy tube had caused ulceration of the wall of the trachea, exposing the cartilage of three of the rings. The twelfth patient was tracheotomised and was doing well until the escape of some vomit into his lung set up septic pneumonia, of which he died on the thirtieth day of his illness. The thirteenth case proved fatal from scarlet fever occurring a week after admission. It was also a severe case of diphtheria in which tracheotomy had been performed, and the patient was progressing favourably when scarlet fever supervened. In nine of these cases tracheotomy had to be performed, and of these only three died, whereas the average number of recoveries after tracheotomy in the same hospital in cases not treated by serum was 1·75 per cent.

According to the same observers the signs that the anti-toxine is exercising a good effect are, firstly, a lessening in the amount of the membrane ; secondly, a notable fall in the pulse rate ; thirdly, an improvement in the general condition of the patient ; and fourthly, a fall of temperature in cases where the temperature had been raised. When once the exudation begins to disappear it continues to do so with greater rapidity than is usual under ordinary methods of treatment. The pulse rate does not fall with the same rapidity with which the membrane disappears. In some cases a rapid decrease in the size of swollen cervical glands, and disappearance of cervico-cellulitis have been observed. The after effects are sometimes unpleasant, consisting of a rash, and occasionally of painful swelling in the joints, but I wish emphatically to state that there is not the slightest foundation for Mr. Lennox Browne's statement that the anti-toxic serum does cause any suppression of urine ; and, lastly, I may be allowed to conclude this short paper with the words of Dr. Goodall, Dr. Washbourn and Mr. Card : "We have from the evidence we have brought before you come to the conclusion that anti-toxic serum is a remedy of great value in diphtheria, and to this conclusion we have come as much from clinical observation as from statistical evidence."

Part III.—MISCELLANEOUS.

Sanitary Science, 1894.

By JOSEPH PRIESTLEY, B.A., M.D., D.P.H.,
Medical Officer of Health, Leicester.

PRACTICAL SANITATION.

A great deal has been written and said during the year about Sewer Gas, as to its being innocuous or otherwise. An important and elaborate report was presented to the London County Council by their engineer, Mr. J. Parry Laws, C.E., who had examined bacteriologically the air in some of the London sewers, with the result that he agreed entirely with the conclusions arrived at by Dr. Haldane and the late Professor Carnelly, viz., that sewer air or gas is innocuous though disagreeable, and further, that sewage in itself is an innocent and much maligned benefactor, whilst the air of sewers is better than that of naturally ventilated schools, and (excepting organic matter) than that of mechanically ventilated schools, containing fewer germs even than the open air. Indeed, Mr. J. Parry Laws found that the germs, which he discovered in the sewer air, practically came from the outside air, and few (or none) from the sewage, unless by violent splashings. Since Mr. Parry Laws' report, Dr. David Arthur has gone over some of the same ground, investigating practically the same facts, with the result that he agrees with them, but differs *in toto* from the deductions to be drawn therefrom.

It has yet to be shown that the absence of *germs* in sewer gas and its innocuousness are related as cause and effect, though Mr. Laws seems to have made out a strong *prima facie* case against the wholesale condemnation of sewer gas as a *vera causa* of infectious and other diseases. The subject is an important one, and has a direct bearing on methods of ventilating public sewers ; for the majority of towns are ventilated as regards their sewers by means of open grids and manholes in the centre of the public streets, and lately (more especially during the past year) there has been a growing desire on the part of sanitarians to condemn this system as being thoroughly insanitary and even injurious to the public health.

That some of these grids may, under certain conditions, become nuisances owing to their giving off offensive odours, no one of experience will gainsay, but whether such smells are injurious to health and whether their occurrence (comparatively rare though it may be) is sufficient therefore to warrant us in condemning *wholly* the system as bad, are at present subjects open to much discussion, and in regard to which much more evidence is required before any definite opinions can be formed. The whole subject has been exercising the minds of sanitarians more especially lately, and several suggestions have been offered in consequence, and will be briefly mentioned hereafter.

It is to be regretted that different observers have made experiments that are diametrically opposed in their results on such an apparently elementary matter as to whether sewer air contains germs or not, and of what nature, *i.e.*, pathogenic or otherwise. For instance, Mr. J. McGarrie Smith, of Sydney, has investigated the composition of the air in some of the sewers there with special reference to the presence of germs, with the result that he found it heavily charged with micro-organisms, which are carried out into the external air by shafts and other openings. Mr. Smith even goes so far as to say that "the cremating shafts failed to destroy the germs in the air passing through them—the loss being often less than one-third." Mr. McGarrie Smith is thus diametrically opposed to Mr. J. Parry Laws.

Bearing upon the subject of sewer gas, Dr. Giuseppe Alessi has during the year published some important results obtained from investigations carried out on rats, guinea pigs, and rabbits. By keeping his animals in cages over openings in the sewer he found that they became much more liable to infection when inoculated with typhoid germs; and further, that the gases emanating from decomposing materials had an injurious (at times lethal) effect upon them, more especially at first. Thus, during the first fourteen days, 90 per cent. died, whilst in the third week only 76 per cent. The animals became apparently "accustomed" to the noxious gases, *i.e.*, *immunised*.

The result of such experiments and reports is that experts are practically divided into those who regard sewer gas as nocuous and deleterious to health, attributing to such gas, most, if not all, zymotic diseases, and those who do not so regard it, but look upon it as innocuous, though disagreeable, and therefore a nuisance. Consequently, as a corollary, this subject of sewer ventilation has come well to the front at Congresses, in medical and lay papers, etc., and the open road grid ventilators have come in for a fair share of abuse, and by some been actually branded as the cause of zymotic disease. No satisfactory solution, however, of the problem as to how to ventilate

effectively sewers (if ventilation is even required) without open grids, has made its appearance, though many suggestions have been offered—the most elaborate one being put forward by Drs. Arthur and Illingworth in what is called "a New System of Sewerage." A complete separation of the drain air of each house from the sewer air by causing the house drains to discharge their contents below the sewerage level at the very base (centre of the bottom) of the sewer, forming thereby an efficient (so it is stated) interceptor trap. The lower end of the drain curves upwards. In this way, even though house drain-traps are out of order or absent altogether, there is no possibility of sewer gas escaping. The sewer air is drawn or propelled by means of fans (floating or otherwise), placed in the sewer at suitable distances, and worked by electricity or other motor power, towards what are called "cremator furnaces," which are placed in convenient localities. Above each fan is a closed chamber (the flood chamber) into which the fan ascends during floods. There are other openings (inlets for fresh air) into the sewers. There is (the patentee claims) no blocking of the drain outlets: (1,) Because they are covered with water; (2,) Because no sewage contains more than 10 per cent. of solid matter; (3,) Because the position of the interceptor-trap near to the sewer secures the maximum amount of flushing power; and further, there is no untrapping of the house drains (see *Diagrams*, *Fig.* 56).

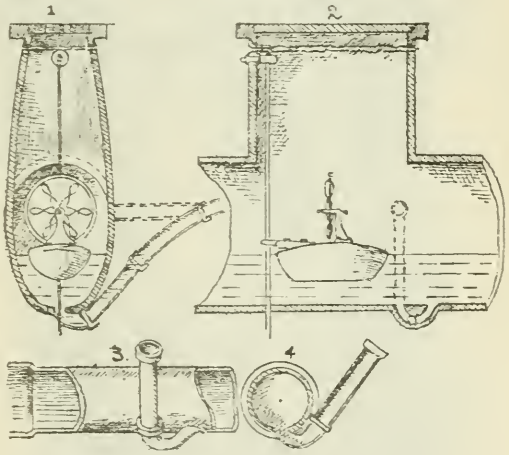


Fig. 56.

Another system of sewer ventilation is by the "Caink" patent (Worcester), which checks all unnecessary strong currents of air and allows the sewers to "breathe" by natural ventilation, undisturbed by outside influences, whilst it filters (by means of two layers of dry cotton

wool) all necessary out-going gases. There is also a receptacle for disinfectants as an additional safeguard. The heat of the sewer air

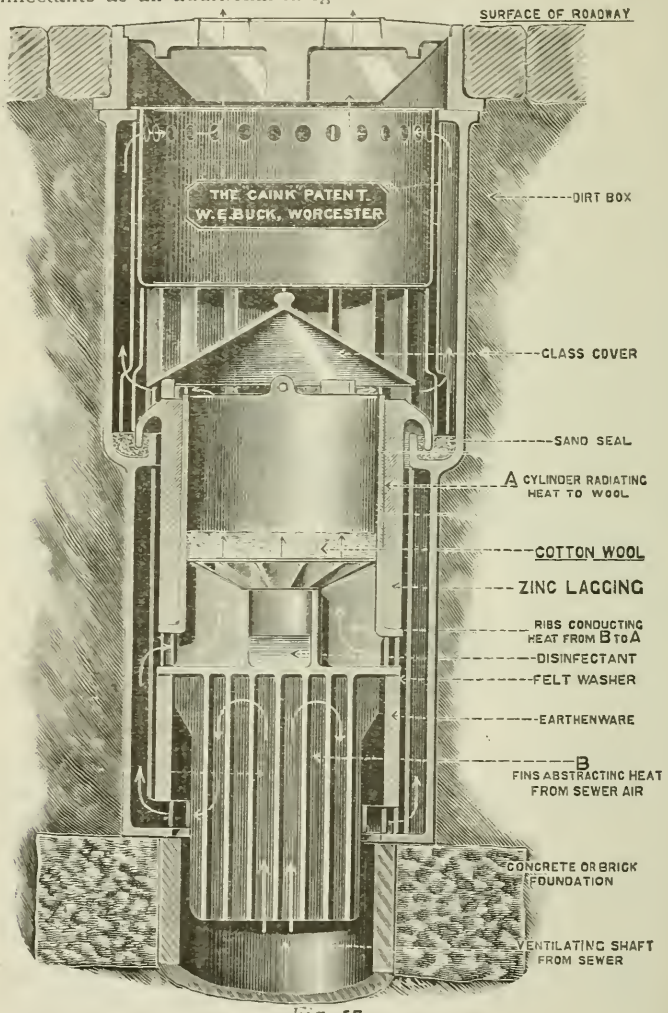


Fig. 57.

is made use of to prevent condensation on the *under* surface of the filters (see *Fig.* 57). The principle of the "Caink" depends upon the

assumption that the unrestricted action of the wind dries the sewer walls and sweeps the poison into the streets. The patent has been tried successfully on lengths of sewers in Worcester, Eastbourne, and elsewhere.

The Reeves' system of sewer ventilation and sewage treatment depends on the action of strong sulphuric acid on a solution of manganate of soda—these chemicals being mixed continuously and automatically, with the formation of sulphurous acid gas, oxygen, permanganic acid and soda sulphate. The result is that the sewer air and sewage are deodorised and disinfected, whilst the formation of noxious gases from the sewage in transit is completely arrested. His method has been tried at Sutton, in Surrey.

Mr. Riley, of Huddersfield, suggests that every fall spout should be carried upwards, above the level of the building, and that a water-sealed trap should be interposed between the spout and the eaves trough which receives the water from the roof. In this way the fall spouts are the ventilators for the sewers, whilst the trap prevents any sewer gas from escaping under the troughing, or entering beneath the slates or tiles. The joints of course must be gas-tight.

Dr. J. T. Neech, of Tyldesley, has also introduced a system of sewer ventilation applicable to sewers which have a rapid flow of sewage and a movement of sewer air with the stream of sewage. A length of sewer is subdivided into sections by means of galvanized metal valves, the lower borders of which stop short of the bottom of the sewer so as to allow the ordinary and constant flow of sewage to pass beneath them, or the valves themselves are segmented, so that, as the stream of sewage rises in height, each segment opens as that rise takes place, and allows the sewage to flow on without opening the entire valve. In this way the movement of sewer air is arrested and ventilation assisted by enabling outlet shafts to act more certainly as such, and by causing the manholes to act in each case as inlets. The valves, by arresting the movement of sewer air, cause the stream of sewage to assist, instead of counteracting, the action of ventilating shafts. This system has been tried successfully at Howebridge, in Atherton.

For those who believe in the deleterious qualities of sewer gas, it is highly important to cut off all house drains from the main sewers; and this subject of the interceptor trap as a sanitary appliance has also been well to the fore during the year, being discussed in Journals and at Meetings. It cannot, however, be disguised that there is a feeling against the interceptor (as a sanitary appliance) setting in, and it is being admitted that such an appliance is not an unmixed blessing, *e.g.*, it offers obstruction to the flow of sewage and is apt to become

blocked, more especially when the drain is laid without proper "fall," or the interceptor is made of a large size (9 inches). If all the drains are cut off from the sewers in this way, there is great interference with the ventilation of the latter, of course.

There is, however, still much more to be said on this subject of interceptor traps,* but meanwhile even they are being improved.

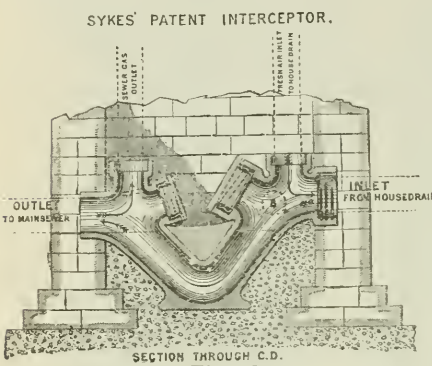
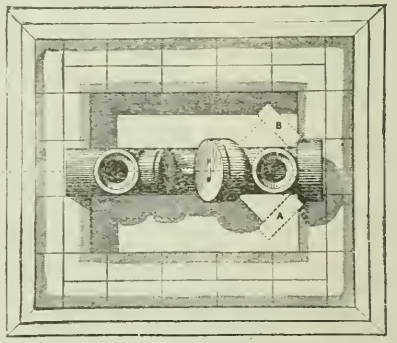


Fig. 58.

Thus, the principle that every house drain ought to ventilate the sewer seems practicable, and has been, therefore, applied by Mr. Sykes in his patent interceptor, which has, in addition, many other improvements. This interceptor (*Fig.* 58), consists of sealed pipes, so that the gases or the sewage are prevented from getting into the chamber, which is used, therefore, only as means of access to the interceptor in the event of stoppage, or for repairs. There is no open channel. Full provision for ventilating the sewer is made by means of the branch arm shown in the diagram, whilst the fresh air inlet admits fresh air direct into the house drains and not into the chamber. Rain water inlets are also provided and made with a shoot into the interceptor, thereby thoroughly flushing the same with the roof water during a storm. The raking or inspection arms



PLAN.

Fig. 59.

* The Hornsey Local Board have reported against the use of interceptors, contrary to the advice of their late engineer (Mr. DeCourcy Meade) and their Medical Officer of Health, (Dr. Clothier). The Local Government Board has refused to sanction this report of the Hornsey Board, however.

are, further, screw stopped, so that they cannot be blown out by the pressure of sewer gas, whilst the pipes are Sykes' patent joint pipes, and are gas- and water-tight, being jointed with an imperishable portland cement composition. There is no necessity, therefore, for a gas-tight manhole cover. The Albion Clay Company, of 18, New Bridge Street, London, E.C., are the makers.

An interceptor trap has also been patented by Duckett and Sons, of Burnley, provided with a ledge upon which to rest a spirit level, so as to ensure the trap being evenly and carefully laid by workmen. The patent is a good one, and has been awarded a certificate of merit at the Health Exhibition, Liverpool, this year.

Drain pipes and drain connections are being also improved. Thus, Messrs. Jones and Sykes, of London, have lately improved the construction of curved open pipes or channels (such as are used in inspection chambers), so as to prevent the sewage from shooting over the edges of the pipes, the channel pipe being bridged across in part. The outer wall is slightly curved nearer to the inner wall, delivering the sewage thereby at a smaller angle. Further, a projection extends more or less round the inside of the discharging end of the pipe so as to break the rush of the sewage, and give to it the direction of the main channel.

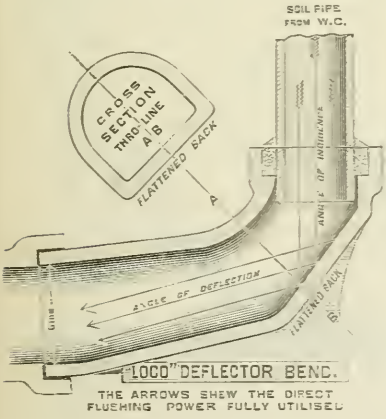

SOIL PIPE FROM W.C.
CROSS SECTION THRO' LINE A B
FLATTENED BACK
ANGLE OF INCLINATION
ANGLE OF DEFLECTION
"LOCO" DEFLECTOR BEND.
THE ARROWS SHEW THE DIRECT FLUSHING POWER FULLY UTILISED

Fig. 60.

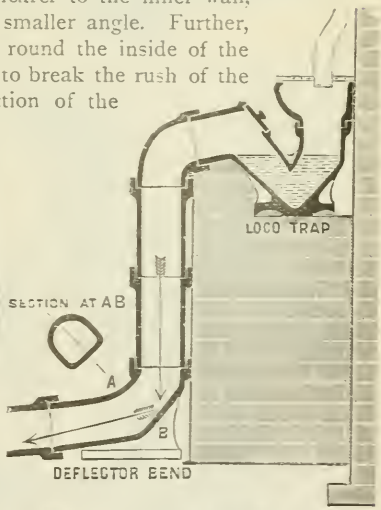


Diagram showing proper construction for branch drain, with patent "Loco" trap and deflector bend for automatically flushing drains.

Fig. 61.

Mr. Lynde, of 25, Cross Street, Manchester, has patented a perfect drain flusher under the name of "loco" deflector bend (*Fig.* 60). The back of the bend is flattened and formed at such an angle that

the flushing water from the W.C. falls upon it so as to be most efficiently deflected down the drain. The principle is the well-known law of nature that "the angle of incidence is equal to the angle of deflection." The same principle has been applied also to the "loco" trap (*Fig.* 61).

The difficulty of jointing lead to earthenware has apparently been overcome, since Messrs. Doulton, of Lambeth, have patented their "metallo-keramic" joint (*Fig* 62). A thin film of metallic compound is painted on the surface of the porcelain, which is then refired. To this the lead pipe can be soldered in such a way that it is found impossible to remove it without fracturing the pottery. The joint is perfectly air- and water-tight, standing the most exhaustive tests. The metallic composition, which is said to contain platinum, is thoroughly incorporated with the body of the pottery.

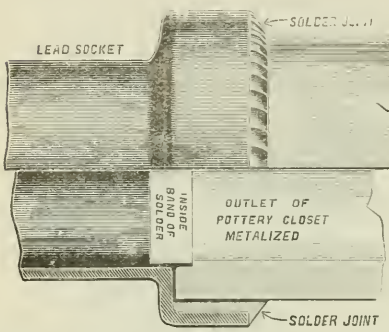


Fig. 62.

Mr. Stephen Hellyer, of London, has also an efficient connection of lead trap to earthenware W.C., slop-sink, or the like (*Fig.* 63).

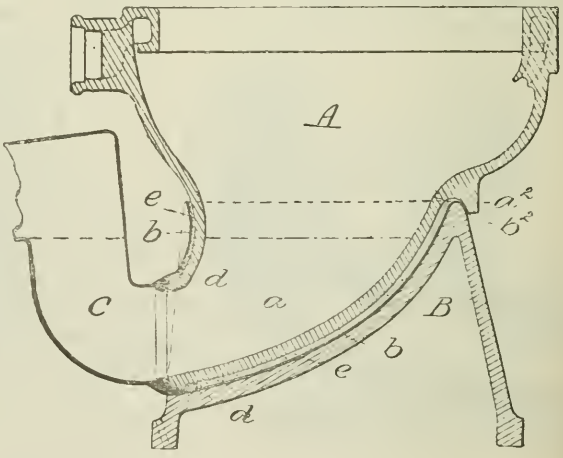
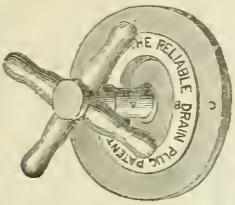


Fig. 63.—The lead trap *c* is continued up outside the trap portion of the closet at *b*, and is turned over the upper part or edge of the base portion *B*, as at b^2, so that when the basin is put in place its over-lapping part, a^2, sits upon the lead so turned over at b^2. To give a tight joint of the lead trap round the end of the part *a* it is shown as having a bead at its end which receives a packing ring *d*, which is interposed between the outside of the end of the part *a*, and the opposed inner surface of the lead trap. *e* is cement, or the like, which is placed between the outside of the part *a* and the inside of the part *b* of the lead trap.

Mr. Milton Syer, of Peckham, London, has patented a "reliable" drain or pipe stopper (*Fig.* 64), for stopping up drains for testing, gas mains whilst under repairs, etc. It is a metal disc with a grooved edge in which is carried a ring of thick india-rubber, the size being a little larger than that of the pipe or main to be stopped. Into the centre of the metal disc is screwed a capstan handle, and the stopper is



Milton Syer's reliable drain stopper.

Fig. 64.

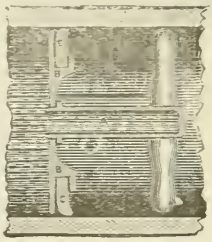


Fig. 65.

simply jammed tightly into the pipe or main. To remove the stopper unscrew the handle and withdraw it, and after it the plate and rubber flange. There is no screwing and expanding of rubber rings. *Fig.* 64 shows an elevation of this "reliable" plug, and *Fig.* 65 a section inside a pipe.

Mention may be made of one or two improvements in gullies. Thus, Mr. J. H. Sankey, of Canning Town, London, has patented a deep gully and interceptor for yards, stables, house drains, and open spaces (*Fig.* 66). It is made of good, well-glazed, stoneware, of a great depth, and is furnished with a bucket and handle of galvanised iron, perforated near the top to allow of the water passing through. The size may be so large that the bucket can be "tipped" directly into a sludge cart instead of emptying the dirt on the road. It is practically impossible for this gulley to untrap in the driest weather, owing to the great depth of the water above the outlet.

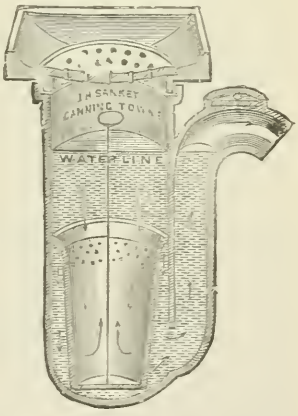


Fig. 66.

Mr. J. Willoughby, of Plymouth, has patented an improvement in ordinary street gullies, by which they can be cleared without interfering with the water-seal between gulley and sewer (*Fig.* 67). This is effected by means of a sealing chamber which is (as it were) tacked on to the gulley at one side, with arrangements, of course, for cleansing all parts when choked. Further, evaporation is reduced to a minimum owing to the water-sealing not being so exposed.

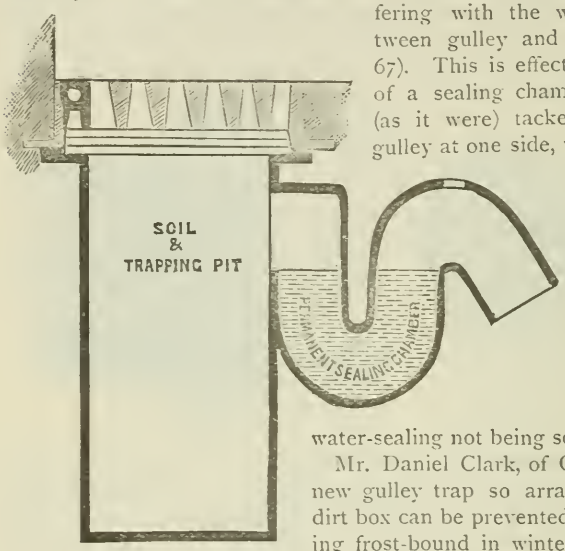


Fig. 67.

Mr. Daniel Clark, of Carlisle, has a new gulley trap so arranged that the dirt box can be prevented from becoming frost-bound in winter. The working is self-evident from the diagram (*Fig.* 68). The dirt box is furnished with lugs, or projections by which it is suspended on the supports inside the casing. By this arrangement the dirt box can take up one of two positions, *e.g.*, the position in the diagram shows the dirt box raised clear of the water in the trap—an arrangement for use in winter, allowing the dirt box to be removed or attended to even when the trap is frozen. A shoot arrangement directs the dirt and water into the box.

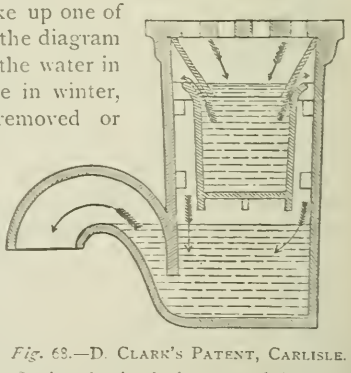


Fig. 68.—D. Clark's Patent, Carlisle.
Section showing basket suspended clear of water seal, to prevent basket getting frost-bound, and can be lowered again during summer.

Mr. Cloke, of Rye Lane, London, has patented a Hygienic Ropeless coverlet for all kinds of dust and rubbish waggons, vans, carts, etc. It is made of a material that will not rot, is light in weight, not liable to be cut with

tins, etc., and being ropeless, is not likely to get out of order. When once placed in position, it remains intact, whilst one half of the cart can be loaded or unloaded, the other half remaining covered.

Messrs. Swaine and Harrison, of Nottingham, have invented a means of utilising the large quantity of empty cans to be found amongst the dry rubbish of towns, by means of a special kind of furnace. In this way the solder is recovered and the tin coating removed from the sheet iron, which can then be sold as light scrap iron. The solderless tins can be disposed of in destructors, or by crushing beneath a steam roller. It is stated that this method can be worked out on a large scale at a profit.

Several new disinfectants have been introduced and deserve mention.

"Conditas" is a new deodoriser, dry, scentless, and harmless. It is a composite powder.

Diaphtherin (the new antiseptic) consists of two molecules of ortho-oxychinoline, one molecule of carbolic acid, and one of sulphuric acid. It is a sulphur-yellow powder of peculiar odour, non-poisonous, and non-corrosive, and was introduced by Messrs. Burroughs, Wellcome and Co.

Feralogen is a new germicide, disinfectant, and deodoriser, introduced by McDougall Brothers, of London. It contains chlorine, oxygen, iron, alumina, etc.; is concentrated, and so bears enormous dilution, mixing with water when stirred. In its concentrated form it is corrosive and therefore dangerous.

Iodic hydrarg possesses greater bactericidal power than $HgCl_2$, but is less poisonous. 1 in 4000 kills germs; 1 in 2000 spores. It is a double iodide of mercury and potassium (mercuric-potassio-mercuric-iodide). It does not irritate and does not precipitate albumen.

Lovetin is iodo-oxyquinoline sulphonic acid, and is a substitute for iodoform. The advantages claimed for it are: (1,) No objectionable smell; (2,) Absence of inflammatory irritation after use. It is a true antiseptic, however.

Germicide soap consists of naphthol, eucalyptol, methyl salicylate, $HgCl_2$, and sal alembroth (the last two being in the proportion of 1 in 2000 respectively). It is claimed as a powerful, but harmless, disinfectant, and is made by Messrs. Fells and Co., Philadelphia.

The Sanitas Company, of London, now supply all sorts of disinfectants in addition to their own peculiar "Sanitas" preparations, and during the year have brought out their patent "sulphugators" for fumigating small spaces, *e.g.*, fowl-houses, kennels, wardrobes, etc. They consist of rolls or bandages coated with sulphur, and a light

may be applied to either end. They ought to be burnt in the small perforated metal cages specially supplied. The sulphugators are made in two sizes, the larger enough for 225, and the smaller for 56, cubic feet of space.

The Sanitas Company are also the agents for the "antidiphtherite" (Stenning's patent), a safeguard for doctors and others who may be brought into contact with infection (*Fig.* 69). It is an apparatus by which air is inhaled solely from the back of the wearer, the air passing through a disinfecting medium consisting of a sponge saturated with, *e.g.*, sanitas. The apparatus fits over the mouth, compressing at the same time the nostrils, as shown in the diagram (*Fig.* 70), and when not in use hangs on the shoulders, ready to be instantly adjusted when required (*Fig.* 71). This patent is to be recommended for work-people engaged in unwholesome occupations, *e.g.*, metallic, etc., as well as for medical men and nurses.

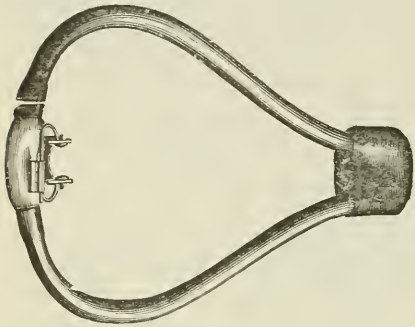


Fig. 69.

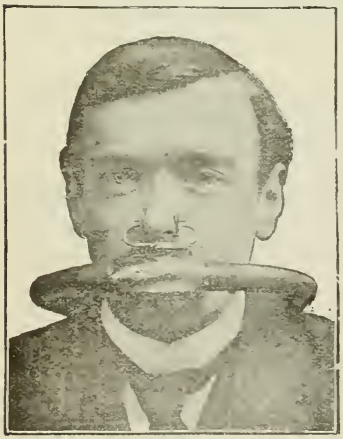


Fig. 70.

Fig. 71.

Whilst on the subject of disinfection, mention may be made of the new disinfecting machine lately brought out by Mr. A. B. Reck, of Denmark (*Fig.* 72). The principle is an entirely new departure, and the advantage claimed is equal efficiency at a very much less cost. The chamber is unjacketed and the steam entering by a pipe at the top drives the air out of a pipe at the bottom. When all air is gone (as shown by steam issuing from the bottom pipe), this opening is closed and the steam driven into the chamber until the pressure rises to 16 lbs. to the square inch, *i.e.*, 1½lbs in addition to the atmosphere. This is the maximum pressure allowed, and is maintained for thirty-five minutes by an automatic arrangement of a lever actuated by the pressure within. Clothes, etc., (after drying) are put into this cham-

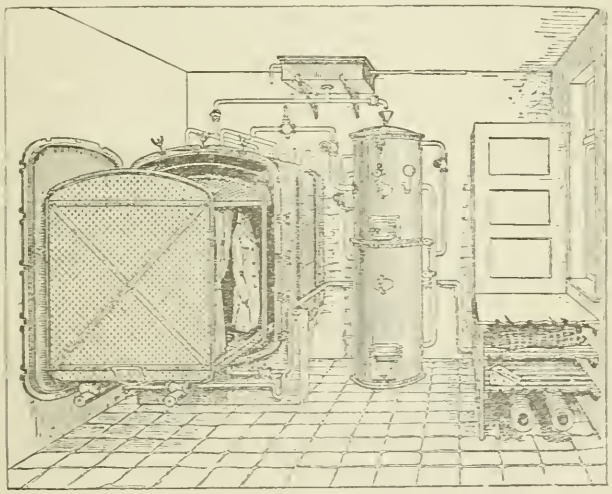


Fig. 72.

ber in a galvanised wire-work basket covered with cotton felt and sliding in and out. The articles are penetrated by the steam and the temperature is 222°F., killing anthrax spores in half-an-hour, even when the spores are placed in the centre of a mattress rolled up in blankets. When the clothes have been disinfected, the lower hole is opened, the steam cut off, and cold water poured in at the top over an umbrella-like covering of metal over the basket. The cold water passes down the sides from top to bottom and runs out of the lower opening with the result that the steam is condensed, a vacuum formed,

and air rushes in through an automatic valve. The clothes are then taken out, and being slightly damp, are aired off.

The entrance and exit doors of the chamber are made steam-tight by means of bolts and screw nuts, and the whole apparatus may be stationary or mounted on wheels, steam being supplied from any boiler. The chamber is circular, oval, or rectangular, and may be made of any size; but can, unfortunately, never be used as a hot-air chamber for the disinfection, *e.g.*, of leather and fur. The apparatus is free from danger on account of the low pressure of steam used, and is being well patronised in Denmark, Sweden, and Norway. The English agents are the Blackman Ventilating Company, Limited, 63, Fore Street, London.

Lastly, a new filter has been introduced, viz., the patent Nibestos Filter. It is very easily cleaned, and the filtration is effected by a film of asbestos, which arrests all particles in suspension, and which can be changed as desired. It is one thing, however, for a filter to arrest suspended matters, and another to prevent the passage through of germs. This important subject is at present being worked at by Dr. Sims Woodhead, whose experiments so far go to show that we have been living in a fool's paradise as regards filtration of our drinking water, as a means of prevention of disease, at least as regards most of the well-known filters. The Chamberlain-Pasteur and Berkefedlt filters (the medium being hard, porous, and very finely divided) appear to act satisfactorily and efficiently, however.

GENERAL REMARKS.

Outbreaks and epidemics of smallpox throughout the country, *e.g.*, Marylebone, Edinburgh, Birmingham, Willenham, Glasgow, etc., have proved again during the year the value of vaccination and re-vaccination in modifying and preventing this disease; and have shown the important *rôle* that tramps and vagrants play in its dissemination from place to place. In this latter connection a conference of sanitary authorities was held at the London County Council offices on July 19th, 1894, with the result that after a protracted sitting, and much discussion, the following resolutions were passed (but by no means unanimously):—

(1,) That common shelters, which are not subject to the law relating to common lodging-houses, should be made subject to such law;

(2,) That there should be power given to the local authorities to require medical examination of all persons entering common lodging-houses, and casual wards, and that each inmate of a common lodging-house, or casual ward, should on admission have a bath of fresh water;

(3,) That the local authority should have power to order the keeper of a common lodging-house, in which there has been infectious disease, to refuse fresh admissions for such time as may be required by the authority ;

(4,) That the local authority should be empowered to require the temporary closing of any common lodging-house in which infectious disease has occurred ;

(5,) That the local sanitary authorities should have power to require the detention of any inmate of a common lodging-house, or casual ward, who may reasonably be suspected of being liable to convey infectious disease ;

(6,) That means should be provided for the detention and isolation of any vagrant found wandering in a public place, if reasonably suspected of being liable to convey infectious disease ;

(7,) That the local authority should have full power to require the disinfection of the person and clothes of any person in a common lodging-house or casual ward, whether infected or exposed to infection ;

(8,) That arrangements should be made by which the occurrence of infectious disease in common lodging-houses, or casual wards, should be made known by the local authority of the district to the local authorities of other districts ;

(9,) That local authorities should be empowered to require the vaccination or re-vaccination of persons in common lodging-houses, or casual wards, who are exposed to the infection of smallpox.

The above resolutions have been forwarded to the Local Government Board, but no further action taken at present.

There has been a good deal of discussion during the year as to the relation between vaccinia and variola, the general opinion being that the former is a modification of, if not identical with, the latter. Bacteriologically, however, this has not been proved, though the subject is being worked at by such well-known men as Ruffer, Plimmer, Klein and Copemann. The first two investigators look upon, as the cause of vaccinia, a small round body, four times the size of a staphylococcus, and generally lying in a clear vacuole in the protoplasm of the epithelial cell. This body they regard as of a parasitic nature, somewhat like the cancer protozoon, and they state that it is found in smallpox pustules as well as in vaccine vesicles. The two latter investigators, however, look upon certain small bacilli as the *causa vera* of vaccinia and smallpox, the parasitic bodies described by the other two observers being probably the result of epithelial irritation of a non-specific nature.

The cholera precautions taken by the Local Government Board have been most effectual, and the Department has been complimented by Her Majesty. To show how far reaching these precautions were it may be mentioned that in July the Local Government Board sent round to all sanitary authorities a circular letter, advising the notification of all cases of diarrhœa (at least in persons over one year of age) during the three months of July, August and September. This is certainly an extreme measure but one that might be very useful in forewarning an authority of a coming attack of cholera, for it must be remembered that antecedent diarrhœa is common before an outburst of cholera, as it is before an outburst of typhoid fever. Several sanitary authorities adopted the suggestion.

The cholera conference, held in Paris, passed a series of resolutions of international importance which, if carried out, will be of the highest importance as preventive measures, more especially those dealing with the Mecca pilgrimages and the Persian Gulf. Quarantine establishments will disappear from the British Islands, and their places will be taken by a strict execution of carefully devised regulations (*e.g.*, medical inspection, etc.).

Haffkiné's cholera preventive inoculations are still being tried in India and elsewhere with varying successes. No conclusions, however, can at present be drawn either for or against, and it is clear that the system is in an experimental stage, and statistics which may be useful are not yet in sufficient quantity to warrant any satisfactory conclusions.

That diphtheria is on the increase (and that too to an alarming extent) in London and other towns no one will gainsay ; but the method or cause of such increase is another more important matter, which has received lately a considerable amount of attention, not only in the press but at several hygienic and medical societies. The importance of a bacteriological examination, *e.g.*, cultivation experiments with blood serum and peptone glucose broth, has been rightly insisted upon, not only in the early stages of the disease but also during convalescence, a period apparently when there is great danger of infection being transferred, *e.g.*, at school, etc.

Dark, damp, and dirty dwellings appear to favour the spread of diphtheria, whilst its virulence depends upon, and increases with, the stagnation of the soil-air and the level of the ground-water. Opinions differ, however, as to whether diphtheria and insanitation are causally related—Sir W. Jenner, Dr. Wilks, and others thinking not; Sir George Johnson, Dr. Sidney Davies, and others believing they are.

The most important advance in connection with diphtheria, however, is the discovery by Dr. Behring, and the application as a therapeutical measure by Dr. Roux, of the so-called anti-toxin—*i.e.*, the immunised serum of the horse. Horses are injected with gradually increasing doses of virulent cultivations of the diphtheria bacilli until they are immune against the disease, and the serum is then collected and used as an injection or vaccination in quantities varying from 10 to 30 c.c. The results at present appear highly satisfactory, not only in France and Germany but also in England, showing a great saving of life, but of course no definite opinion can yet be expressed for or against this anti-toxin treatment, though statistics, which are rapidly collecting, will be of the greatest value. The horses to be used are carefully selected, and injected previously with mallein to prove that they are free from glanders (a disease of the horse communicable to man).

1894 will be a memorable year from the fact that a plague broke out in Hong Kong about April. Investigation has shown that it is the same disease that devastated London in 1665, viz., the bubonic plague, an acute, specific, fever, intensely fatal, accompanied by high temperature, cerebral congestion, delirium, and the formation of painful swellings of the lymphatic glands (inguinal and others). Its incubation is five to eight days, and the nature of the infection or contagium miasmatic, probably soil produced, and due to a bacillus discovered by the Japanese bacteriologist (Kitasato). The epidemic lasted from April to July.

The report of the Water (Metropolis) Commission has appeared and given rise to great disappointment to sanitarians, from the fact that the Commissioners have reported in favour of the present Metropolitan supply for the next forty years, condemning thereby London to drink sewage contaminated water. By so doing they have practically refused to accept the excellent report by Dr. Barry on the Tees Valley Typhoid Epidemic, whilst they do not think it necessary to do what Manchester, Birmingham, Glasgow and Liverpool have either already done, or are doing, viz., to procure an ample supply of pure water from great distances like Thirlmere, Wales, and Loch Katrine. The report has brought forward the interesting subject of typhoid as a water-borne disease, and rivers in relation to their powers of self-purification.* The value of slow

* *Vide* Dr. Barry's Report on the Tees Valley Epidemic, Lawrence's (United States) Report, Kelley's Report on the Worthing Epidemic, and Percy Frankland's treatise on "Micro-organisms in Water."

sand filtration has been insisted upon in regard to microbes in water; whilst the interesting statement has been made by Dr. Burlureaux, of the Val de Grâce Military School, Buda Pesth, that by depriving water of its lime salts, you at the same time render it free from microbes, *e.g.*, typhoid, cholera.

An epidemic of typhoid has been traced at Bandon to the use of 'separated" milk. Infected milk was taken to a creamery, separated, and returned to other farms along with other separated milk. In this way typhoid was distributed from one infected farm to all the other farms that supplied that particular creamery with milk. The conclusion to be drawn is a simple one, *i.e.*, a thorough inspection of all farms.

Attention has again been drawn to the fact that crabs, oysters, and shellfish gathered near the sewage outfall of a town may, if eaten, occasionally give rise to an attack of typhoid, or even other zymotic disease. Watercress, too, grown upon sewage farms has been suspected of carrying typhoid germs, and giving rise, therefore, to attacks of typhoid fever in those who partook of them. So at least it has been reported lately by Dr. Verdon, medical officer of health for Lambeth, London.

The hopes expressed in favour of the new electrical sanitation (the Hermite system of sewage treatment) have not been realised, at least at Worthing, if we are to judge from the report published by the medical officer of health lately, proving that (as far as the Worthing trials went) there is no instantaneous decomposition of fæcal matter and no sterilisation of sewage. Other methods, however, of sewage treatment have come forward and deserve mention :—

(1,) The bacillite process at Kettering depends upon the total destruction of all organisms by the addition of certain volatile chemicals and "steam batteries." It is stated that the sewage can be purified and sterilised at a reasonable cost. 90 per cent. of bacteria are removed, all suspended matters, and 90 per cent. of the dissolved organic pollution. The patentee is Mr. Hope.

(2,) The Scott-Moncrieff system depends upon the principle of "scavenging micro-organisms," which accumulate in upward filter beds (of 14 inches depth) composed of flint, coke and gravel. The sewage then passes along nitrifying channels, *i.e.*, open channels filled with coke, with the result that the sewage is decomposed so effectually that the resultant effluent is perfectly clear, and purer than the standard required under the Rivers Pollution Act.

Messrs. Brantigam and Edelmann have drawn attention to a chemical recognition of horse-flesh—due to an iodine reaction of glycogen, which is a constant constituent thereof. Finely divide the suspected meat and boil with four times its weight of water. The broth which results is to be treated with dilute nitric acid and filtered; and then the filtrate is to be acted upon with saturated hydriodic acid carefully poured in. Between the two layers of liquid a red or violet ring will develop, if the suspected meat is horse-flesh.

The Home Secretary has during the year appointed two lady inspectors of factories and workshops. whilst lady sanitary inspectors have been appointed by several sanitary authorities. In some departments of sanitary inspectors' work the employment of women may be of the greatest advantage, more especially in connection with instruction to be given to mothers in domestic hygiene, and in the inspection of dress-making establishments.

The Home Secretary has added the following trades and manufacturing processes to the list of dangerous industries, viz., flax mills; linen factories; red, orange, and yellow, lead works; lead smelting; tinning and enamelling of iron hollow ware; and electric accumulator works.

Underground bakeries in London and elsewhere have come in for a fair share of abuse during the year. The attack on them has been led by Dr. Waldo, of London, and it is interesting to note "the other side of the question" which has been put forth by the Bakers' Association. Some underground bakeries *may* be bad: all are certainly not.

A select committee of the House of Commons was appointed during the year to enquire into the working of the Margarine Act, 1887, and the Sale of Food and Drugs Act, 1875, and to report whether any, and if so what, amendments of the law relating to adulteration were desirable. From this committee some much needed alterations and reforms in the carrying out of the Food and Drugs, etc., Acts are expected, and the sooner such reforms are introduced the better. The whole subject is an important one.

Improvements in our methods of death certification are much wanted, and the subject has been discussed freely during the last year, culminating in a deputation which waited upon the Home Secretary, and the Parliamentary Secretary of the Local Government Board. Some good will doubtless arise from this. At the same time another subject intimately connected with the above is that of the proper registration of all midwives—a measure that has long been wanted, and will, it is hoped, be obtained shortly.

At the close of the year came the report on the Unification of London from the special commission appointed. The suggestions offered are most radical and sweeping, and practically mean the sounding of the death-knell of the old City of London with the succession of the London County Council as the future governing body. So much for the suggestions; but it remains to be seen whether they will be carried out or not, although the recommendations are to be brought forward at once before Parliament in the form of a Bill. The Corporation of the City of London have meanwhile formulated a scheme of their own, and are apparently prepared to fight to the end the County Council.

THE EDITOR'S TABLE.

A Review of New Inventions, and Pharmaceutical and Dietetic Novelties.

The examination of the progress made by the manufacturers of medical requirements is one of the most interesting of our duties, and it has been our good fortune to undertake it during a decade which has been notable for the advances made in every department.

The manufacture of surgical instruments has undergone a revolution owing to the necessity being recognized of constructing instruments in such a way that they can be maintained in a state of chemical cleanliness. In the case of scalpels and many instruments, this has only implied the use of metal handles instead of those of ivory and ebony, and of surgical cases made entirely of metal, instead of leather or wood; but with other instruments, such as scissors, forceps, syringes, etc., the change has necessitated very great skill and mechanical ability on the part of the manufacturers, the main point being that every part of the instrument shall be capable of being readily taken apart and replaced, and that each part shall be able to undergo complete disinfection. The surgeon may now throw his whole caseful of instruments into boiling water as a prelude to an operation without the chance of injuring them, and no one can doubt that we are deeply indebted to the surgical instrument maker for our capacity to carry out strict aseptic treatment, even in every-day practice.

In the manufacture of appliances there is also shown a greater skill in adapting means to the end they are intended to serve, besides the saving of time, and greater portability than in appliances of former date. In pharmacy we have an attention to elegance in preparing medicines which was unknown even when we first commenced to write these reports, and much of this has been accomplished by elaborate machinery, which involved great skill and labour to render perfect. With all these advances there has been a lessening rather than an increase in the price of the articles supplied to the profession, and with it there has been an enormous increase in the trade of the medical manufacturers.

The question of cost of articles supplied for the immediate use of the profession, whether books or instruments, depends very largely upon the number of purchasers. If, for instance, every medical book could be guaranteed as large a circulation as that of the "Medical Annual," it would be possible for publishers to bring out medical text books of the same size at a similar price, but it is because there is only a certain percentage of the members of the medical profession who are ready to throw aside the instrument which will do, for the one which will do better, or to expend money in keeping themselves abreast with the knowledge of the times, that the manufacturer of medical articles is handicapped, and must get back the cost of the original outlay from the smaller body of purchasers. It is a curious fact, borne out by experience, that the same practitioners who regularly subscribe to the "Annual," are also for the most part purchasers of other books and of the various improvements of the surgical mechanician and the pharmacist. When a new article is described in our pages it is brought before the notice of the large bulk of those who are likely purchasers, and especially of those who find a duty and a pleasure in making themselves acquainted with all the new advances in the practical requirements of professional work.

In writing these descriptions there are two methods which might be adopted : the first is the ordinary "press notice," which is practically a repetition of the statement of the manufacturer; and the second is a statement of opinion after carefully examining and testing the article under review.

It is the latter method which we adopt, and we hold ourselves responsible therefore for every opinion we express, and we lay ourselves open to correction, if any of our readers after practical trial of the article reviewed should have ground for differing from our view. We do not waste time in trying to wrap an elegant piece of literature around a "toilet soap," but we endeavour to say frankly and impartially what we think about each article submitted to us, in the fewest words possible.

We are aware that it is easier to invent an improvement than it is to make it known to the profession, and that the capital required for the invention is as nothing compared with that necessary to give it publicity. In this section we try to meet this difficulty. We are glad to report any and every kind of improved article likely to be of interest to our readers, *providing that the article is submitted to us for examination, and we are free to express an opinion whether it is favourable or not.* Save in the instance of a few manufacturers, this plan has given complete satisfaction.

Pressure is brought upon us each year to insert notices of articles which we have never seen, and the plea is put forward that this practice is usual with some journals. This may be true, but it is at any rate against our rule. The only exception we can make is in the case of a medical practitioner, who has made some modification of an existing instrument, or has had some article made to meet his special requirements. In such a case a description of the invention will be inserted under the author's name. The editor is responsible for all descriptions which are not so signed, and every possible test will be applied to the manufactures sent to us before they are commended to the practitioner.

SURGICAL APPLIANCES AND DRESSINGS.

Air Pessaries.—This form of pessary is growing in popularity. Oval in shape, and filled with air, a soft cushion is formed, which cannot possibly irritate the most sensitive. They yield readily to any pressure which may be brought to bear upon them, but spring back immediately into place. The sample submitted to us of one of these pessaries by Messrs. Sumner & Co. is perfectly made, and 1s. 6d. seems to us a particularly low price.

Anti-Toxin Syringes.—An anti-toxin syringe, supplied in a neat case with two needles by Messrs. Ferris & Co., of Bristol, is constructed on the same principle as the well-known Koch's syringe. It is large enough to hold 10 cubic centimètres of fluid. The use of an air bulb to replace the piston of the ordinary syringe has very great advantage in regard to the convenience of keeping the syringe perfectly clean and aseptic, although it is doubtful whether it is quite as convenient in practical use. The syringe is very perfectly constructed and carefully graduated.

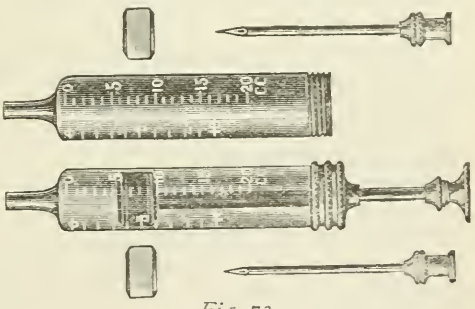


Fig. 73.

Another syringe adapted for the administration of anti-toxin is produced by Messrs. Sumner & Co. (*Fig.* 73). This has a piston as in the ordinary instrument, but arrangements are made for antisepsis by

making the plugs of asbestos, so that the piston may be boiled before use. The case also contains additional asbestos plugs, to provide against renewal as often as may be required. There is also an additional glass cylinder; so that practically there are two syringes available; that is, if time did not permit of the absolute cleansing of the syringe, all the essential parts are available for the construction of a new one. We can find no condition present in the appliance which would interfere with absolute and rapid cleansing, and we consider it eminently adapted for the purpose for which it is intended.

Another syringe which has found much favour with those who are using anti-toxin, sent to us by Messrs. Ferris & Co., of Bristol, is very similiar in construction and arrangement to the above, but the piston is an india-rubber disc, which is easily removable and replaceable (spare discs are provided in the case). By an ingenious arrangement the rubber can be tightened by screwing the head of the piston rod. This is in itself a distinct improvement in the manufacture of syringes, and might easily be adapted to every form of syringe.

The syringe has also a smaller needle attachable to the syringe by a short length of india-rubber tube, as well as the larger needle. Both these are platinum-iridium, and can be sterilized in the flame of a spirit lamp. The syringe is graduated both for French and English measures.

It cannot be said that the manufacturers have not risen to the occasion and produced appliances well suited for the administration of anti-toxin and other agents of its class. We described the Debove Syringe sent us by Messrs. Ferris & Co. last year, and this is also well suited for anti-toxin administration, and we have found it stand usage particularly well.

While these syringes are the result of a particular line of therapeutic investigation, we believe they will find a number of uses outside that for which they are primarily intended, and they contain improvements in the manufacture of syringes which must be permanent.

Hypodermic Syringes.

Sumner's Aseptic.—The greatest difficulty in making a syringe which shall be really aseptic is in the plug. Koch did away with the piston and plug altogether and replaced it by an india-rubber ball, an arrangement more scientific than adaptable to every-day requirements. In Messrs. Sumner's anti-toxine syringe the difficulty is solved by making the plug of asbestos, but the most practicable of all appears to be arrived at in a hypodermic syringe sent to us by the same firm, where the plug is abandoned and the

piston remains (*Fig.* 74). This is managed by making the piston of solid metal and sufficiently large to occupy the entire calibre of the syringe throughout its whole length. The cohesion between the smooth surface of the metal and the glass is sufficient to serve all the purposes of the ordinary plug. To cleanse the instrument it is only necessary to draw the piston right out; no unscrewing is required, and it may be wiped, boiled, or passed through the flame of a spirit lamp without danger of injuring it. There is combined in this particular instrument another advantage in the fact that the needle fits into the syringe as a solid plug, only the small bore of the needle being left, instead of the cap-like arrangement of the ordinary needle. In using syringes of this construction of needle, it must be remembered that it is possible to bring great leverage to bear upon the metal plug which forms its base, and if carelessly used it constitutes a weak point in the syringe. This is obviated if the needle itself is grasped at the time when it is inserted. This syringe is a distinct advance in the construction of aseptic syringes and it is at the same time a practical appliance, well adapted for the every day requirements of the practitioner. It is supplied by Messrs. Sumner & Co. in a neat metal case, with two needles, for 6s. 6d.

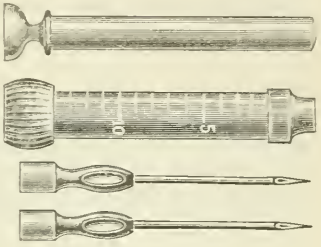


Fig. 74.

Oil Piston Syringe.—Messrs. Ferris & Co. have produced a syringe which obviates a common difficulty in general practice where hypodermic syringes may not be frequently used. The piston shrinks, and perhaps a long time may be occupied before it is in working order. In Messrs. Ferris & Co.'s syringe the piston contains an oil chamber, so that its action does not depend upon the moisture taken up from the fluid injected. It will preserve its integrity for any length of time, even in hot climates, where the old form of syringe presented frequent difficulties. It is packed in a neat case with two needles.

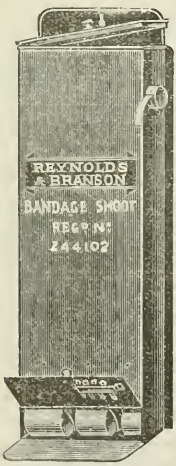
A Miniature Hypodermic Syringe.—In a little metal case two inches long and no thicker than a lead pencil, Messrs. Ferris & Co. have placed a complete hypodermic syringe of beautiful workmanship, and having a capacity of 7 minims. The needle is so arranged that it fits into the piston of the syringe when not in use, and this not only adds to the portability of the instrument, but tends to preserve the needle

from damage. Now that strychnia, morphia, etc., can be carried in such small bulk for hypodermic use, there is no reason why the practitioner should not always have among the contents of his waistcoat pocket the means of giving immediate aid in cases of emergency, and this little syringe will be very helpful for this purpose.

Aseptic Jars.—Messrs. Sumner & Co. have adopted a very practical method of sending out aseptic sponges and dressings. They are placed in an earthenware jar which is capable of being secured absolutely air-tight. These jars are likely to be valuable for a great variety of purposes, as any substance can be kept air-tight for an indefinite time, while the jar can be opened and shut without the least trouble. They are very inexpensive.

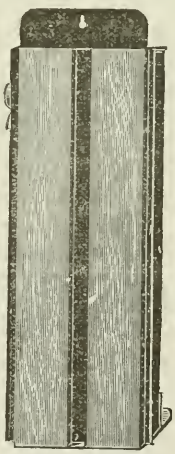
Axis Tractor.—We described Dr. le Page's useful addition to the ordinary midwifery forceps in our last issue and we have been very gratified to know that our opinion of its value has been fully endorsed by our readers. Messrs. Sumner & Co. are the manufactures.

Bandage Shoot.—This is a practical invention made by Messrs. Reynolds & Branson. It consists of a metal case suitable for hanging against a wall, is about two inches in depth, and less than two feet in length (see *Figs.* 75, 76). It contains an assortment of bandages of different widths, which are obtained by opening a little door at the lower part of the shoot. This door has a place for safety pins, while in another part there is found a pair of scissors, and at the side a roll of tape plaister. There is space for a tourniquet in the upper part, and also an arrangement by which straight splints may be placed at the back. The advantage in surgery and out-patient practice when everything wanted for the application of a bandage or a splint is ready to hand and cannot get out of place is very great, and if the emergency occurs at a distance it is only necessary to unhook the case



Front view showing bandages, etc.

Fig. 75.



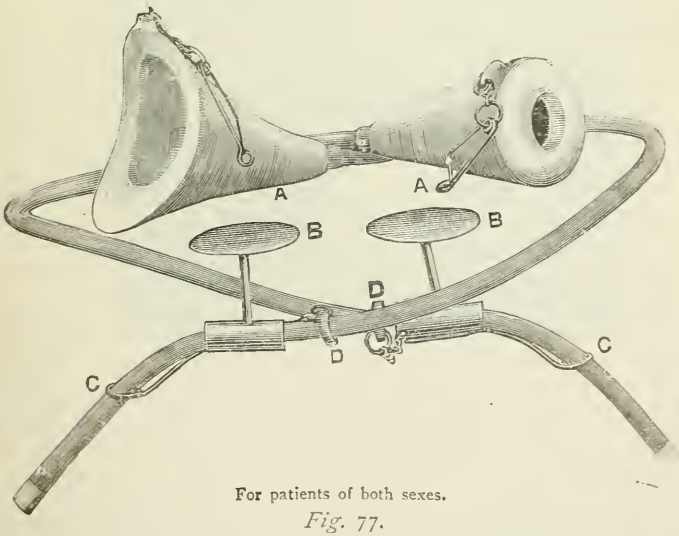
Back view showing splints.

Fig. 76.

and carry it to the place. The usefulness of one of these bandage shoots at police stations, colliery offices, and railway stations can be readily appreciated, and the price at which they are produced is so small that we hope they will be largely adopted. By lessening the number of bandages contained in the shoot, convenient space is provided for lint, cotton wool, or other dressings. When ordered for private surgeons the manufacturers should be asked to paint them a less glaring colour than the vermilion which adorns the sample sent to us.

Bed Pan (Klucke's Improved).—This bed-pan is smaller, more shallow, and more easily cleansed than the ordinary pan. It is quite large enough for its purpose, and having a convex under surface and being conveniently shaped, it is easily placed in position, without disturbing the patient, by passing it between the thighs and depressing the bed instead of raising the patient's body. It will be well liked both by patients and nurses. Messrs. Sumner & Co. are the agents for the manufacturers.

Bed Urinal.—Under the name of "Butcher's Patent Conduit," Messrs. Sumner & Co., of Liverpool, supply a urinal which can be



For patients of both sexes.

Fig. 77.

used by a patient without leaving the bed or requiring the assistance of the nurse. A porcelain vessel, the shape of which depends upon

whether it is required for a male or female, is placed within the patient's reach, and on urinating the contents of the vessel flow into a receptacle beneath the bed (*Fig.* 77). The idea is simple enough, but in its practical application there are a number of details to be considered, and this appliance is the result of the careful working out of mechanical requirements. The arrangements are such that the most restless patient will not disturb the position of the apparatus during sleep, and the apparatus can in no way disturb the patient. There is nothing about it which will spoil by continued use, or disuse, except the straight piece of rubber tubing which can be renewed if necessary by the patient. This fact is of importance, because so many of these appliances very soon become useless. We can confidently recommend "Butcher's Patent Conduit" as an appliance which will prove of great comfort to patients and a great relief to their nurses.

Belt for Umbilical Hernia.—An india-rubber belt, with an air pad, which is capable of being inflated to any required size, has been produced by Sumner & Co., of Liverpool, for 1s. 6d. We mention the price because it seems hardly worth while to trouble with surgical dressings and appliances, which answer more or less badly, when a practical and permanent appliance can be obtained so cheaply.

Brace (Chest Expanding).—This differs from the ordinary brace sold for the purpose of preventing stooping shoulders, in the fact that the tendency of such appliances to cause chafing under the arms is avoided, not by padding the shoulder straps, but by so altering the arrangements of the straps that the pressure comes in front of the shoulder instead of under the arm. It is an example of intelligence of design, for which the manufacturer, Mr. J. H. Haywood, of Nottingham, is justly celebrated.

Caddies (Ferris' patent).—We thank Messrs. Ferris & Co., of Bristol, for having solved a question which concerns us much more deeply than most of the great political questions with which the general public trouble themselves. How is the practitioner to keep his stock of lint, cotton wool, adhesive plaister, strapping, oil-silk, waterproof sheeting, antiseptic dressings, etc., etc., in anything like order, so as to be able to find whichever is required when he wants it, and so that the several articles do not spoil as a result of the haste and waste of every day practice? Messrs. Ferris & Co. deal with this question by putting each dressing on a cylinder and enclosing this cylinder in a tin box, which they call a "caddy" (see *Fig.* 78). At the end of the caddy the name of the dressing is distinctly printed. They next produce a wooden cabinet having

pigeon-holes which fit the caddies, and these when placed in position, with the name distinctly marked at the end, enable us at once to pick out the desired dressing. The box is opened, the required quantity pulled from its reel and cut off, and the remainder is untouched and cannot soil however long it may remain. There is no place for the "caddy" but its vacant pigeon-hole, so that if a dozen of the most untidy assistants or nurses were using

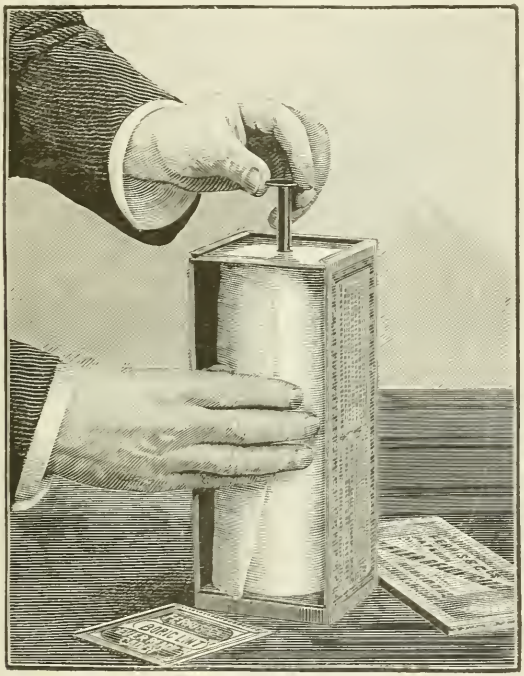


Fig. 78.

from the same cabinet, it would be impossible for any dressing to be out of its place, or spoiled by careless usage. Busy practitioners will agree with us about the practical importance of this. Some of us who are fairly tidy in our habits, so far as the limits of time allow, know too well the feeling of doubt and uncertainty with which the drawer in which the dressings are kept is turned over, and sometimes we find it, but often—"*mais nous avons changez tout cela*,"

We can only express our sympathy for those who do not know of these useful and inexpensive caddies, which are supplied separately and adapt themselves to the practitioner's own shelves or cupboards. Although for the reason we have mentioned we would recommend a cabinet where each caddy has its place.

Pocket Medicine Case.—Messrs. Cox & Co., of Brighton, have forwarded us a neat pocket medicine case, containing selections of their well-known tasteless pill, arranged in formulæ suitable for meeting the ordinary class of case of the daily visiting round. The very great convenience of the physician having at hand some of the remedies most likely to be required has been frequently alluded to by us. This case is strongly made in leather, with glass-stoppered bottles, capable of holding a good supply of each of the remedies employed. It is, of course, open for the practitioner to fill the bottles with pills prepared according to the formulæ he prefers, and Messrs. Cox & Co. undertake the preparation of such pills with the coating for which they are justly celebrated.

Carbolized Tow (Calvert).—Among the many new antiseptic dressings the value of carbolized tow is likely to be forgotten; yet when we have to deal with offensive discharges and require a deodorant as well as an antiseptic, there are few dressings so effective or economical as Calvert's carbolized tow. Even in ordinary surgical dressings it is not used as largely as it should be, for while it forms a most efficient and aseptic protection to the wound, the porous character of tow renders it less heating than cotton-wool or lint.

Regulating Inhaler.—We noticed this very excellent instrument (the improved Junker's) made by Messrs. Khröne & Sesemann, at some length in our issues for 1891 and 1892. Further minor improvements have been added, and the whole apparatus is very complete and simple for the administration of chloroform and kindred anæsthetics in exact doses.

Chloroform Inhaler (Folding).—This is a flannel mask for administering anæsthetics, so arranged as to lie flat in the pocket when not in use. It is manufactured by Mr. Hamilton Spratt, of Bournemouth.

These simple inhalers are often preferable in every-day practice to the more complicated appliances, and we think this one will prove both useful and convenient.

Christia Lint.—This has an impermeable backing on one side and very soft lint on the other, so that the addition of oil-silk or other

protection is unnecessary. This means a great saving of time and expense in the application of ointments and compresses, and it also prevents any chance of the displacement of the protective. The backing of this lint is oil-proof, as well as water-proof, and it is also unaffected by chloroform or alcohol, and does not crackle by heat. Messrs. Christy and Co. are the manufacturers.

Pocket Cocaine Pipette.—Messrs. Burroughs, Wellcome & Co. have introduced this instrument with a view to obviate the toxic effects so frequently produced by the indiscriminate use of cocaine solutions. With larger instruments holding a considerable quantity of the solution, sufficient for many doses, it is difficult to prevent excessive use of it. By means of this little pipette, the patient is enabled to control the quantity with the greatest possible nicety, since he cannot exceed the dose ordered by the physician, the solution being prepared from the "tabloids," one or more, as the case may be. It not only secures accuracy of dosage, but it enables the patient to carry on the treatment systematically and regularly, as the appliance itself can easily be carried in the vest pocket.

Curettes.—Messrs. Ferris & Co. supply in a neat metal case, easily carried in the pocket, a most complete assortment of flushing curettes. The common handle is made wholly of metal, and is shaped so that it can be firmly grasped by the hand. The curettes are screwed into this handle and when in position complete a canal which passes through the handle to the extremity of the curette, so that a continuous stream of water may be played on the part during the operation. The instruments themselves, together with the case, being made wholly of metal, are easily rendered aseptic. It is the most complete, practical, and portable case of curettes which has come under our notice.

Portable Douche.—This is an ingenious arrangement by which a douche for the irrigation of wounds, for the administration of enemas, or for vaginal injection, can be carried in the surgeon's bag. The vessel for containing the water is made of soft india-rubber, the only rigid part being the mouth of the vessel and the part by which it can be hung on a nail or tied to the bed-post. There is a long pipe for the fall of the water, and attachments suitable for ordinary douche or vaginal injection. The whole apparatus can be comfortably stowed away in the coat pocket, and yet is so strongly made as to give every prospect of great durability. We decidedly think it is one of the appliances which we shall all find useful and be glad to have. Messrs. R. Sumner & Co. are the manufacturers.

Aseptic Dressing Forceps.—This is a most ingenious arrangement by which the blades of a dressing forceps are readily separated for purposes of cleansing, while the spring is in no way interfered with (*Fig.* 80). The whole construction is characteristic of the large amount of mechanical skill which is being brought to bear upon modern instruments. They cost 2s. 6d. and may be obtained from Sumner & Co.

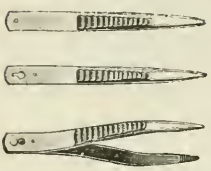


Fig. 80.

Pocket Ear Scoop and Spud.—We have carried a little instrument of this kind for many years, but owing to its being made with a vulcanite handle it is impossible to cleanse it properly, and both the scoop and the spud are very rickety. A similar instrument sent us by Messrs. Sumner & Co. has none of these disadvantages. It is made wholly of metal, the scoop and spud are rigid in use, and the entire finish of the instrument is most satisfactory. It is a very handy instrument to have in the pocket case.

Porous Elastic Bandage (Statham's).—This differs from the ordinary porous elastic bandage in the fact that it contains a number of fine perforations, which are only visible when the bandage is stretched. The bandage is also somewhat thinner and of a softer texture than ordinary. It is well adapted to give a firm even support without heating or irritating the skin. We are sure it will give satisfaction to practitioners who specify Statham's bandage, as it is a very decided improvement. (H. Statham & Co., Manchester.)

Finger Stalls.—These are not the ordinary finger stalls used for the purpose of treating injuries, but a thin transparent membrane which fits closely to the finger and enables tactile impressions to be conveyed through it. The object is to protect the practitioner's finger while making vaginal and rectal examinations. The advantage of having such protection is sufficiently clear, and we have found that digital examination of the rectum is a much less unpleasant operation since we have used them. They are very inexpensive, and can be obtained from Sumner & Co., of Liverpool.

Angular Gouge or Parting Tool. *W. Arbuthnot Lane, F.R.C.S.*

I have for many years discarded the use of the trephine, as I consider it a clumsy and unsuitable instrument. Instead of it I have used gouges, and preferably those ground on their concavity, and with them I found that I could remove large pieces of bone with comparative rapidity. It occurred to me that an instrument with its sharp free margin, presenting the form of two sides of an equilateral triangle

(*Fig.* 81), if ground on its inner surface, would remove bone much more rapidly than the concave gouge; consequently I consulted Messrs. Down Brothers, and gathered from them that a precisely similar instrument was used in carpentry, and was called a parting tool.

They made me instruments of suitable temper, and I found that the results I obtained more than came up to my expectations, since I was able to remove areas of bone of any form, without injury to the dura mater, and with great rapidity. I found it convenient to use two

Fig. 81.

different gouges, so ground that one was more suited to the thicker dense skull of the adult, and the other to the less resistant skull of the child. At first sight, one would imagine that there would be some risk of injuring the dura mater with the sharp angle of the instrument, but with the most ordinary care there does not appear to be any risk of doing so. Certainly, I believe that there is infinitely less risk to the dura mater in using the angular gouge than the trephine, and the mechanical advantages of the former over the latter only require a trial to demonstrate them.

A New Bone-cutting Forceps. *W. Arbuthnot Lane, F.R.C.S.*

In operating upon the skull and spinal column great difficulty and delay are constantly experienced in removing portions of the bone with the various kinds of forceps and chisels at present in use. To obviate this, Messrs. Down Bros., have made for me several forms of cutting

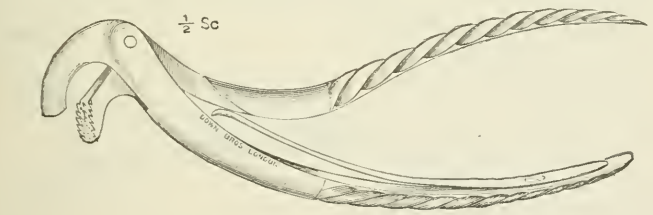


Fig. 82.

forceps, one of which is illustrated in the accompanying diagram (*Fig.* 82), from which the mechanical principle upon which this instrument is constructed can be readily gathered. As far as I am aware, the

principle is an entirely new one as applied to surgery, and it is one which enables the operator to remove bone, however dense and hard, with such rapidity, safety and ease, as cannot be approached by any other surgical instrument. The instrument is seen to consist of two blades moving on one another around a transverse axis. The proximal blade ends in a deeply serrated surface, which rests upon the bone immediately beyond the portion which is to be removed. It acts as a fulcrum around which the forceps move in a vertical plane when the handles are approximated and depressed. The distal blade is claw-shaped, presenting a sharp cutting edge. This is introduced beneath the piece of bone which the surgeon intends to remove, and when the handles of the instrument are forcibly approximated and depressed, this sharp edge tears through the bone with such an amount of power as can be readily understood from the fact that the length of the short arm of the lever, which is one of the first order, corresponds to the varying, though always narrow, interval, which exists between the ends of the two blades when in use, while for practical purposes the force that can be brought to bear upon the long arm is unlimited.

Forceps (Modification of Sir Spencer Well's Catch Forceps).

J. Greig Smith, M.A., M.B.

For some years past I have been using in abdominal and general surgery a modification of the Well's forceps, which I like so much that I venture to recommend it to my professional brethren.

The general character of the instruments is sufficiently indicated in the accompanying engravings (*Figs.* 83, 84). Instead of the serrated jaws in ordinary use, there is a sort of double hawk's bill without any transverse serration. Thus, the tissues caught, instead of being pressed into a corrugated ribbon shape, are nipped and sharply compressed along one or two lines. Ordinary forceps with flat serrated jaws can be pulled upon only in the direction of the handles ; they may slip on being tilted laterally so as to place a ligature. These forceps cannot slip, in whatever direction they are pulled. The pad of uncompressed tissue in the centre of the jaws gives enormous holding power. For catching and holding slippery or friable ovarian cysts

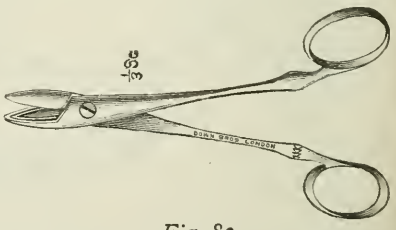


Fig. 83.

they have clear advantages. In holding a divided broad ligament, the impossibility of the tissues slipping out sideways will be appreciated by those who know what such an accident means.

As hæmostatics they are, I think, superior to the ordinary pattern. They cause division of the inner coats, and the outer coat is spread out and commingled with the surrounding tissues. In abdominal surgery it is almost never necessary to apply a ligature in the parietal incision, or on divided adhesions, if these forceps are used. The sharp pointed forceps with one lip for dissecting or picking up the peritoneum is a favourite instrument with all who use it; indeed, so efficient is it, that it is doubtful if the second lip is necessary in the smaller forceps.

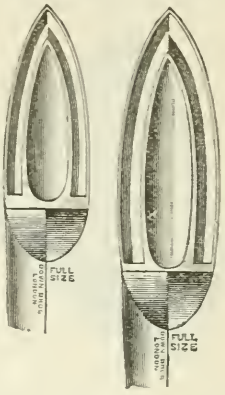


Fig. 84.

The tips of the smaller forceps are pointed on the Tait plan, so that a ligature slips over them easily. They may be had of any size, of any shape, bent or straight or T shaped. Messrs. Down Bros., of 5 and 7, St. Thomas Street, London, S.E., are the makers.

Gas and Ether Inhaler (The Rumboll-Birch).—The aim of this appliance is to facilitate the use of ether for surgical operations, and for prolonged dental operations, by the previous and conjoint administration of nitrous oxide gas (see *Fig.* 85).

The advantage of the method is, that the patient is very rapidly rendered unconscious by an anæsthetic which is not unpleasant to take, and while unconscious the anæsthesia is maintained by ether, the nauseous odour of which is then no longer perceptible to the patient. To carry out the administration by this method it is necessary to first give the gas alone, then a combination of gas and ether, and finally to use ether alone. To do this so that the process is under complete and immediate control, requires an apparatus of very ingenious construction, and we have withheld any description of the one manufactured by Messrs. Down Bros., of Thomas Street, London, until we had had the opportunity of testing the practical working of the instrument. We are glad to find that it is in every respect satisfactory. The construction does credit to the reputation of the well-known manufacturers; every part is well finished and free from any liability to get out of order, while the mechanism is so well arranged and clearly indicated that there is no trouble in learning how to use it.

The apparatus is equally useful for the administration of gas or ether alone, and those who have already a gas apparatus in their possession need only purchase the ether apparatus.

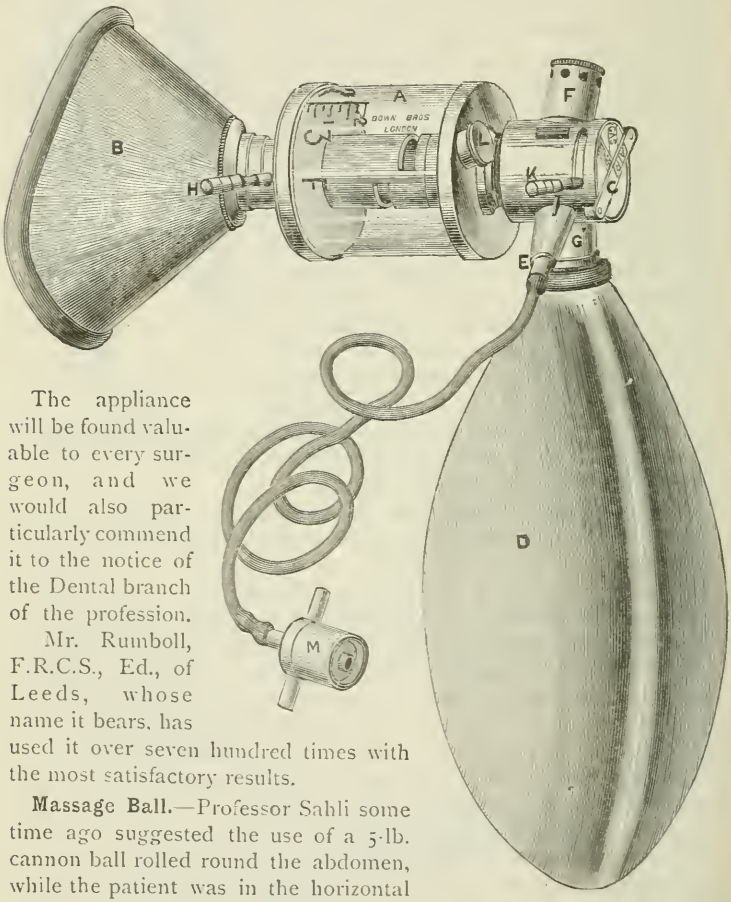


Fig. 85.

The appliance will be found valuable to every surgeon, and we would also particularly commend it to the notice of the Dental branch of the profession.

Mr. Rumboll, F.R.C.S., Ed., of Leeds, whose name it bears, has used it over seven hundred times with the most satisfactory results.

Massage Ball.—Professor Sahli some time ago suggested the use of a 5-lb. cannon ball rolled round the abdomen, while the patient was in the horizontal position, as a means of increasing the peristaltic action of the intestine in cases of constipation. The massage ball is an endeavour to improve on this suggestion. It is made of india-rubber, is flexible, and covered with warm material. It does not, however, appear to have occurred to the inventor that the dead

weight of this ball is not sufficient to overcome the mechanical resistance offered by the abdominal muscles; in fact, a weight of 20-lbs. will rise and fall with each respiration without affecting the condition of the intestines. A 5-lb. cannon ball would not be of much use unless it was aided by the mechanical pressure of the person using it. But in this ball this possible means of increasing its effect is discounted by the resistance of the air contained in the ball itself; it is not, therefore a practical appliance. A cannon ball covered with flannel would be a great improvement upon it, because of its rigidity, but even then a little practical experience would show how little dead weight assists in the act of manipulation. Messrs. Sumner & Co. are the agents for this ball.

A Medical Lamp.—This is the cheapest as well as one of the most practical medical lamps which we have seen. It is an ordinary paraffin lamp, giving a good light, which is concentrated by means of a powerful reflector *Fig.* 86. It may be carried in the hand or hung against a wall, and is therefore a very handy thing to have in the house, as it is not only useful for examining the eye, throat or ear, but it can be taken down and used for microscopic work or as an ordinary reading lamp. The price of the lamp is 4s. 6d. and can be obtained from Messrs. Sumner & Co., of Liverpool.

Fig. 86.

Nasal Atomizer.—This atomizer is especially constructed for the application of medicinal substances to the nose. All recent experience points to the great advantage of using for such applications an oily menstruum instead of water, and a purified petroleum which Messrs. Ferris & Co. have introduced under the name of Saxol (see p. 578), is the best possible menstruum for this purpose. This atomizer is so constructed that it fits the nostril, and the spray appears as a smoke-like cloud from the opposite nostril. With this atomizer and a supply of saxol many cases of chronic irritation of the naso-pharynx will be found to clear up, which have resisted ordinary treatment.

Nebulizer.—This is a spray manufactured by Messrs. Oppenheimer, Son & Co., for the administration of balsamic and oily solutions. A large central glass vessel holds the solution, and to this is attached a tube with a mouth and nose piece, for inhaling the vapour of the spray. This part may be replaced by a tube for directing the spray to the nose or ear. The whole of the attachments being of hard

rubber, are not affected by any form of medicament which may be employed : it is equally serviceable for oily or watery solutions. The appliance is, however, rather larger than is strictly necessary for the purpose it is intended to serve.

A New Needle Holder.—In many operations a good needle-holder is a most important instrument, and the one submitted to us by Messrs. Ferris & Co. will materially shorten the duration of many, in which the time occupied is an important element in the danger to the patient. The handle of this needle-holder presents a breadth which slopes from one to two inches, so that it can be firmly grasped in the hand, and the needle is under the full control of the operator, both in directing its movement and overcoming any resistance offered to its passage. But the most important part of the invention is that by simply compressing the handle beyond a certain point the needle is released and the jaws open ready for a fresh one, which is grasped and held rigidly by the same movement of the hand. Thus the release of the needle and its re-grasping, or the placing in position of another, does not literally occupy more than a second. This needle-holder is a most important addition to surgical appliances. It is supplied by Messrs. Ferris & Co., of Bristol.

Oiled Cambric.—This, which is also known as muslinette, is a recent production of the firm of Sumner & Co. It serves all the purposes of oil-silk ; in fact we prefer it, and it is only half the price.

Saccharometer (Carwardine's).—With this simple instrument the estimation of the quantity of sugar in urine presents no greater difficulty than the mere detection of its presence. No calculation is required, the actual percentage of sugar being shown at once on the burette. It is employed as follows : Urine is poured into a graduated burette up to a certain mark and a fixed quantity of water added. A definite quantity of Fehling's solution is then boiled in the test tube, the diluted urine being added until the blue colour disappears, when the quantity of sugar may be read off on the burette. The price of the instrument is only 7/6, and Messrs. Mayer & Meltzer may be congratulated on their very excellent addition to our appliances for exact diagnosis.

Sim's Folding Speculum.—This is a Sim's speculum made in two portions so as to overcome the awkwardness of carrying the necessary instrument. It is made wholly of metal, and when fitted together has the full rigidity of the speculum made in one piece. This point is important, and we can say from careful examination of its construction that no force employed while it is held in position will affect its

rigidity. We do not know if one point has occurred to Messrs. Ferris & Co. who send us the instrument, and that is, that the two halves of the instrument form a most convenient method of making an examination of the vagina. By using the two blades simultaneously we have a bivalve speculum with independent "valves," which can be manipulated so as to obtain a very full view of the vagina for ordinary diagnostic purposes.

Surgical Aseptic Pocket Knife.—This knife presents a solution to the problem, "How can a practitioner carry a knife in his pocket and still keep it aseptic?" In the first place we have a metal handled pocket knife; the parts of which are all separable for the purposes of cleansing, and which is as easily opened and fixed as the ordinary pocket knife (*Fig.* 87). This is a practical improvement on some of the common handles for aseptic knives, as they were a little awkward to manage. The knife contains two blades, but either of these blades is instantly replaceable by four others which are supplied in the same case with it. Thus the practitioner has a complete assortment of straight, curved and blunt-pointed bistouries, adapted for the purposes of minor surgery, all of the most improved kind, and the space occupied by the whole is not more than that which would be required for a large sized pocket knife. The metal aseptic case is provided with an extra chamois-leather cover in order to keep the whole bright. The arrangement is so perfect in every practical detail that it is not possible to suggest an improvement, but we should like to see one little addition which we feel sure that many practitioners would appreciate. It is a metal case just large enough to hold the metal handle and its two blades. This would be the exact size of an ordinary surgical pocket knife, and enable the practitioner, if he preferred it, to leave the additional blades at home, while preserving all the advantages of having a pocket knife which is perfectly aseptic.

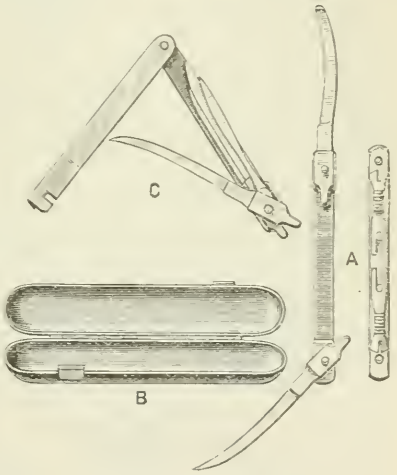


Fig. 87.

We have no doubt that Messrs. Sumner & Co., from whom this knife may be obtained, will make this addition if required.

Surgical Stockings.—By the introduction of a continuous spiral elastic thread, Mr. J. H. Haywood, of Nottingham, has made an elastic stocking which has no seam, so that the discomfort ordinarily attending the wearing of these stockings is very largely obviated. We notice also that the material of the sample sent to us is much softer than the ordinary "silk elastic" stocking and more porous, and we shall certainly order this form of stocking for our patients. The same maker has also invented a stocking which can be instantly tightened or loosened at any point, an advantage which all who have had to treat varicose veins will readily appreciate, and our readers will do well to take note of this invention.

Suspensory Bandage (The Octopus).—This bandage has a broad well-shaped band for passing round the back, and is fastened by broad elastic bands, which can be tightened without the use of a buckle. The whole workmanship and finish is of a very superior character to that of the ordinary bandage sold, and the article is also more comfortable in use. Mr. J. H. Haywood, of Nottingham, is the manufacturer.

Hollow Back Truss.—Mr. J. H. Haywood, of Nottingham, has designed a truss to meet the requirements of those patients, who having rather prominent vertebræ, find the truss chafe the skin. It is so arranged that the pressure is taken off the centre of the back, and comes wholly over the sides of the lumbar region where, owing to the absence of bone, a considerable amount of pressure may be exercised without causing discomfort. We think that this shape of truss is well suited to all classes of patients, as it is always an advantage to avoid pressure over the spine.

Universal Protective.—Under this name Messrs. Ferris & Co. supply a fine, almost transparent, water-proof material which is an excellent substitute for oil-silk and much less costly. It may be obtained on rolls in their patent caddies, which is the best way to preserve these dressings.

Wound Retractors.—Mr. Jordan Lloyd, Lecturer on Operative Surgery in the Mason College, Birmingham, has devised an instrument, which he has called a self-retaining retractor or wound hook. The retractor can be best understood by a glance at the diagram (*Fig.* 88). It is made of steel and is nickelled, the hook at one end being fenestrated and blunt, for introduction between the edges of a wound; the other end is pointed, so as to hook easily into the skin of

an adjacent part or other resistant structure. The small puncture made by the fixing hook is of no consequence and heals immediately. They are made in various patterns and sizes; those with sharp hooks at each end are useful in holding the edges of widely gaping wounds temporarily together while sutures are being inserted. The hooks may also be used in the same way as ordinary retractors, or they may be fixed into bandages, and held in the same manner. They are of

Fig. 88.

service in numberless operations, where the "antiseptic" hands of assistants may not be available—such as tracheotomy, hernia, ligatures of arteries, excision of glands, and other deeply-seated swellings, cranial operations, excision of joints, etc. They are made by Messrs. Down Bros., St. Thomas Street, London, S.E.

The "Zula" Syringe and Irrigator.—This syringe is constructed with a vaginal plug which completely closes the mouth of the vagina

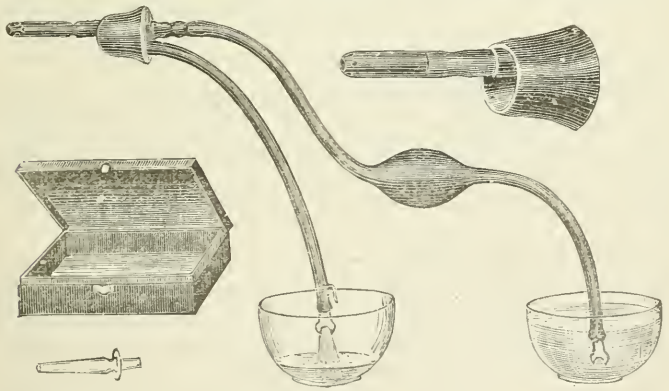


Fig. 89.

so that the used liquid is compelled to pass out through the inside of the plug and through the outflow tube (*Fig.* 89). Thus the same

liquid can never be injected twice, and the syringe may be used while reclining on a couch without the least danger of wetting it. The douche pipe has a flexible joint, which makes it very easy to introduce, and also prevents any possibility of injuring the parts. A bone rectal tube is supplied with each "Zula" Syringe, and it fits into the same socket as the vaginal plug, which is detachable, thus forming an ordinary enema. The utility of this appliance is so obvious, both for vaginal douches and for the purpose of an ordinary enema that the practitioner can hardly afford to be without it.

PROGRESS OF PHARMACY.

Anestile.—This is composed of ethyl and methyl chloride. It evaporates at a lower temperature than ethyl chloride and produces local anæsthesia more promptly, and a smaller quantity is therefore necessary. It is sold by Mr. B. Kühn in nickel-plated copper cylinders, which can be re-filled. The method of use is the same as the ethyl chloride spray, viz., the heat of the hand holding the cylinder is sufficient to cause a fine jet of anestile to play upon the part against which it is directed, the anæsthetic effect being the result of rapid evaporation temporarily freezing the part.

Antinervine.—This is a combination of peptonized salicylic bromonilid, produced and legally protected by D. Radlauer, and sold by Mr. B. Kühn. It is claimed to be an excellent palliative in cases of neuralgia and rheumatism, and also to act as an antipyretic.

Antiseptic Perles (Radlauer).—In these perles we have a combination of thymol, menthol, eucalyptol, and saccharine in globular form. They have been found to act as an effective antiseptic to the mouth, larynx, and tonsils. Two or three of them are allowed to dissolve slowly in the mouth, and are then swallowed. Mr. B. Kühn is the agent.

Bismuth Salicylate Tabloids.—Each tabloid contains 5 grs. of the bismuth salicylate, guaranteed to be physiologically pure; dose (adult) ranging from 1 to 4 tabloids—5 to 20 grs. The drug itself being insoluble in ordinary menstrua, such as water or alcohol, these tabloids are so compressed that upon ingestion they very quickly disintegrate. The astringent and antifermentative properties of bismuth salicylate render tabloids of this drug very useful in various forms of diarrhœa, due to typhoid, pulmonary and intestinal tuberculosis, gastric catarrh, etc. Burroughs, Wellcome & Co. are the manufacturers.

Bronchi-fume.—This is an asthma powder, produced by Mr. W. A. Manning, of Ash Tree Villa, Boldmere Road, Wylde Green, London. It differs materially from the ordinary asthma powders in use, and there is no doubt that some of its efficacy is due to the active principle of cubebs and aniseed which enter into its composition. We all know the necessity of changing the remedy in asthma, and this one deserves a careful trial at the hands of the profession.

Celery Compound (Morse's Glycerole of). A drachm of this is stated to contain the equivalent of celery seed, 4 grains, catsup herb. 5 grains, chamomile, 2 grains. It has been found to be an excellent sedative both for children and adults, and careful examination has been made to discover some stronger sedatives than those mentioned by the manufacturers, such as opium, chloral, etc., but without result. We strongly commend the remedy to the profession, especially for the troubles of infants during dentition. Burgoyne, Burbidges & Co., 16, Coleman Street, London, E.C., are the agents.

Creasote.—Messrs. Ferris & Co., of Bristol, send us samples of this useful but unpleasantly flavoured drug, put up in the form of capsules, containing either 1, 2 or 3 minims, and also pills containing 1 minim. There is no doubt that this is the only way in which creasote can be dispensed without causing nausea to the patient. With guaiacol it does undoubted good in early stages of phthisis, but is less valuable in advanced cases. The same firm also supply capsules containing a combination of creasote with cod-liver oil.

Diaphtherin consists of two molecules of ortho-oxychinoline, one molecule of carbolic acid, and one of sulphuric acid. It is a sulphur-yellow powder of peculiar but slight odour, soluble in equal parts of water. It is an excellent disinfectant, as, notwithstanding its powerfully antiseptic action, it does not possess the poisonous caustic action of phenol, nor the toxic properties of oxychinoline; it is also free from corrosive qualities. Its bacteria-destroying and polyseptic properties have been shown by the experiments of Professor Emmerich and Dr. Stabel to be very great. A specially valuable property of diaphtherin is that it is comparatively non-poisonous. This has been demonstrated by extensive experiments on both human beings and animals; and it was found that quantities capable of producing toxic effects were not required for therapeutical employment. In the treatment of burns, ulcers, etc., in eczematous conditions, in diseases of the ear and nose, in otology, and rhinology, and in dental practice, excellent and even brilliant results may be expected from the use of diaphtherin. Messrs. Burroughs, Wellcome & Co. are the agents.

Easton's Syrup Tabloids (Tabloid Trium Phosphatum).—These tabloids may be prescribed instead of the syrup, as they are more convenient and more portable, while they are equally effective. The objections to the syrup, viz., its bitterness, often excessive acidity, effect on the teeth, solidification and deposition, are well known ; all these are avoided in the Easton's syrup tabloid. Each tabloid represents exactly the respective proportions of iron, quinine, and strychnine, contained in a fluid drachm of the official syrup. Burroughs, Wellcome & Co are the manufacturers.

Emol-Keleet.—This interesting substance, which was brought forward by Dr. Allan Jamieson, of Edinburgh, and which is described in this issue (p. 24), has been placed in the hands of Messrs. Burroughs, Wellcome & Co., for distribution. It is a natural dusting powder of a most perfect character, having an almost impalpable texture and a delicate flesh-pink colour, due to the presence of a small quantity of ferric oxide. It contains a considerable percentage of steatite (better known as soap-stone), which accounts for its peculiar silky feel when rubbed between the fingers. It has been used by Dr. Jamieson for the treatment of callosities of the skin, and has been found to answer better than any other application.

Ergole.—This is a purified and concentrated preparation of ergot, very suitable for hypodermic injection, or for administration by the mouth. It contains all the active properties of ergot, and is less irritating. It is manufactured by Messrs. Oppenheimer, Son & Co.

Extractum Corticis Cerebri.—Messrs. Willows, Francis and Butler have kept pace with the modern development of therapeutics by preparing an extract of the cortex cerebri. Whether the effect be chemical or physiological there is no doubt that preparations made from the brain, taken internally, have a sedative and strengthening effect upon the nervous system. We all have cases where there would be at least no harm in trying this remedy now that it can be obtained in the form of a convenient preparation.

Ferratin.—This is a new preparation of iron which claims to be identical with the iron stored in the body, especially in the liver, as a reserve material for the formation of blood. It appears as a fine powder of a reddish character, resembling the oxide of iron. It is free from and is insoluble in water, but a sodium salt is also manufactured which is soluble. Cases have been recorded by various authors to show that this preparation is well borne by patients who cannot take ordinary iron salts, and that the results have been remarkably good. It is supplied by Messrs. Parke, Davis & Co.

Gelatum Eucalypti.—This is a jelly of eucalyptus which may be used for antiseptic purposes, for sprays, inunction, or any of the purposes for which the properties of eucalyptus are required. Its advantage is in the fact that it is prepared with a non-fatty base, and is therefore more suitable for many purposes than the pure oil or ointments made from it. Messrs. Mackey, Mackey & Co. are the manufacturers.

Germicide Soap (Fels's).—This soap is a very efficient antiseptic, of pleasant odour, and has had a large sale in America, where its virtues are much appreciated. Messrs. Lorimer & Co. are the agents.

Guaiacol.—This substance has practically taken the place of creasote in the treatment of phthisis and pulmonary disorders, on account of its less disagreeable odour and taste. One of the best methods for prescribing it is in the form of guaiacol carbonate, which Messrs. Ferris and Co., put up in 4-grain capsules. This is practically tasteless, but splits up in the digestive canal into guaiacol and carbonic di-oxide.

Hypoderms (Soluble).—Messrs. Oppenheimer send tubes containing the various medicines required for hypodermic use, put up in tiny pellets, which have the great advantage of instantly dissolving in water, without any trituration. The readiness with which they dissolve quite removes the difficulty ordinarily experienced with this otherwise convenient method of carrying hypodermic medicines, and they will be much appreciated. Messrs. Oppenheimer also supply a hypodermic syringe in a neat case, with space for four tubes of these soluble pellets.

Iron Jelloids.—We have examined this new form of dispensing Blaud's pills with considerable interest. It is known that the efficacy of these pills depends upon the iron being preserved as a ferrous carbonate, but there is a great tendency for it to become converted into the unassimilable ferric state. Messrs. Warrick Bros., of 18, Old Swan Lane, London, have, as the result of experiments, shown that the ferrous carbonate may be preserved by its admixture with gelatine as the ordinary jujube mass. They have produced little gelatinous pellets, not larger than an ordinary 2-grain pellet, and of the same shape, but which contain the equivalent of a 10-grain Blaud's pill. The preparation is not only elegant, but it is the only one of its class which may be dissolved on the tongue and found to be not unpalatable by those who find a difficulty in swallowing an ordinary pill. The question as to whether the jelloid contains the iron in its ferrous state can be always determined by cutting one in half with a knife, when the light colour of the interior will show that oxidation has not taken place. We

propose to give these jelloids an extended trial in both hospital and private practice

Itrosyl.—This has been produced by Messrs. Fletcher, Fletcher & Co. as a means of preparing spirit of nitrous æther of definite strength in such quantities that the risk of loss of ethyl nitrite by evaporation and decomposition is reduced to a minimum. The itrosyl is supplied only in glass cartridges containing 1 fluid ounce, hermetically sealed, and will prove of special advantage for hospital use, or in the army medical department, where the saving in storage space is an important consideration.

Kidney Extract.—Messrs. J. Richardson & Co., of Leicester, send us a powdered extract of kidney put into tablets, each containing 5 grains. An opportunity is thus afforded the profession of conveniently testing the therapeutic advantages of this new medicinal agent.

Lactophenine.—This agent is practically identical with phenacetine, the place of acetic acid in the latter being taken by lactic acid. It is four times more soluble in water than phenacetine, which gives it a great practical advantage. The reports are very favourable, its hypnotic and analgesic power being well marked, and only occasionally is faintness and perspiration complained of. Messrs. Parke, Davis & Co. are the agents for the manufacturers.

Liq. Cinchonæ Hydrobrom. (Fletcher).—In this preparation the active principles of the cinchona bark are dissolved out by means of hydrobromic acid, and the resulting extract concentrated in vacuo. It contains the whole of the alkaloids present in the bark, and, in addition, the kinic, kinovic, and cincho-tannic acids, together with the natural constituents of the bark. Iron compounds, and more particularly bromide of iron, can be prescribed with the hydrobromic extract without being decomposed, blackened in colour, or precipitated. This property is possessed by no other extract of cinchona, and will be of manifest value in cases in which the physician desires to administer iron in conjunction with cinchona. These facts render this preparation a distinct improvement in pharmacy, and we have no doubt that it will receive a cordial reception at the hands of the profession. Fletcher, Fletcher and Co. are the manufacturers.

Nebulizing Solutions.—Under this name Messrs. Oppenheimer, Son and Co. have put up fifteen combinations for use as a spray in various affections of the throat and nose. Their compositions are stated, and there is in the one before us a marked flavour of benzoin, which would be very suitable in some cases, though not appreciated in others.

They also supply a pure petroleum base, to which the physician can add the necessary medicaments.

Nuclein.—This substance is the result of careful enquiries into the nature of the germicidal constituents of the blood serum. The nucleins may be said to form the chief chemical constituents of the living part of the cell. Chemically they are proteid bodies, containing a large amount of phosphorus in the form of a nucleinic acid, combined with a highly complex base. So far as we can gather the acid in all is the same, while the base differs. The nucleins are used therapeutically by means of injections repeated daily, or at longer intervals. They belong to a very promising line of investigation, and Messrs. Parke, Davis & Co., supply gratuitously literature bearing upon the subject, which is well worthy of attention.

Pepsin, Bismuth & Charcoal.—We have here tabloids, each of which represents 1 gr. pepsin, 2 grs. bismuth subcarbonate, and 2 grs. purified willow charcoal. The pepsin used in this combination has a digestive power of 1 in 3,000, as indicated by the official coagulated-albumen test. Burroughs, Wellcome & Co. are the manufacturers.

Petroleum Emulsion (Angier's).—This preparation consists of a highly purified petroleum oil, combined with the hypophosphites of lime and soda. It is a very good emulsion, mixes readily with water, and is palatable and well borne by delicate stomachs. There can be no doubt that petroleum is antiseptic, and that it exerts a special soothing effect on inflamed or irritated mucous surfaces. Its nutritive value is perhaps still a moot question. While there can be no doubt as to the gain in weight (often quite marked) from the use of Angier's petroleum emulsion, it may be that this gain is largely due to the effect the emulsion has in the digestive tract indirectly by aiding in the digestion and assimilation of other foods. This petroleum emulsion has been used principally in pulmonary and bronchial affections, and as a substitute for emulsions of cod-liver oil. It has created a most favourable impression, and we think that medical men generally will find it a most useful addition to their list of remedies.

Roncegno Water.—The natural ferruginous arsenical waters of Roncegno, of Mount Tesobo in the province of Trent, are now exported to this country. Every litre of the water contains over 6 centigrammes of arsenious acid as well as 2 grammes of ferric acid. It is also rich in silica, the value of which in mineral waters is not sufficiently appreciated. It has been found to be of especial value in the treatment of skin diseases, and of affections depending upon anæmia and debility. Locally the treatment by Roncegno has a good

reputation in chronic uterine disorders, and it is also highly esteemed by those who suffer from a malarial cachexia. The dose of this powerful water is 1 to 4 tablespoonfuls, mixed with plain water, during the day. Mr. Richard Davis, of Maddox Street, Regent Street, London, W., is the agent for this country.

Santal Oil.—This, and also other essential oils, may now be obtained, put up in palatinoid form, from Messrs. Oppenheimer, Son & Co.

Saxol.—This is a remarkably pure petroleum in the liquid state, intended as an application to the nose and throat or any inflamed or abraded surface. It is odourless, colourless, and tasteless; it is perfectly aseptic, and is not affected by either strong acids or alkalies, and it has the great advantage of favouring the absorption of any medicinal matter incorporated with it in an unaltered state. Messrs. Ferris & Co. also supply a spray especially adapted for the application of medicinal substances dissolved in this menstruum to the nose, and we can from practical experience say that without any medicinal addition a spray of saxol is one of the best prescriptions that can be ordered for chronic inflammatory conditions of the nose and throat. The spray is described in the previous section.

Styptic Varnish (Antiseptic).—We once read a long article in a medical journal on the treatment of a cut finger. The necessity of rest, accurate apposition of the parts, and entire asepsis, were fully set out, with a distressing attention to detail. Our suggestion is as follows: "Apply styptic varnish with a camel's hair brush." This is made by Sumner & Co., of Liverpool, and in addition to being strongly styptic is also a powerful antiseptic. It helps to maintain the parts in apposition, and it promotes healing. It is useful as an application to any form of cutaneous hæmorrhage.

Tar (Wine of).—This production of Messrs. Sumner & Co.'s is about the most palatable preparation of tar with which we are acquainted, and there is no doubt that tar is a most valuable remedy for catarrhal and inflammatory conditions of the throat and air passages.

Testicular Tablets.—Messrs. Chaix and Remy, of Paris, have forwarded through their agents, Messrs. Ferris & Co., of Bristol, samples of testicular extract in the form of tablets. These are prepared in precise accordance with Brown-Séquard's method, and render it very easy for the practitioner to test in actual practice the remarkable claims put forward for this organic extract. Messrs. Ferris & Co. keep all the "organic extracts" in stock, together with the appliances used in their administration.

Thyroid Elixir.—Among the various preparations of thyroid gland

sent us by Sumner & Co., of Liverpool, we notice an elixir which is very palatable ; moreover it appears capable of being kept for an indefinite time without injury.

The following samples have also been received :—

Messrs. Mackey, Mackey & Co. send *Mist. Cerii Co.*, *Mist. Bismuthi Co.*, and *Mist. Cascara Co.*, as samples of the elegant pharmaceutical preparations prepared by them. They also send a preparation of *Chlorodyne*, and of an *Antiseptic Solution* useful for wounds and dressings, the composition of which is not stated.

Messrs. Burgoyne, Burbidge & Co. send a sample of *Malt and Pepsin*, which is too well known and esteemed by the medical profession to need further remark.

The Maltine Manufacturing Co. send samples of their well-known preparation of *Maltine and Cod Liver Oil* to show the great improvements made in its manufacture.

The Standard Disinfectants Co. send a specimen of *Florozoon* which they claim to be a purely vegetable and non-poisonous disinfectant, but of which, save that it has a pleasant smell, we are unable to speak, as the composition is not stated.

Messrs. Newbery & Sons send us samples of numerous preparations for which they are agents. Most of these consist of special formulæ, which have been long tested clinically before being put up in elegant form for physicians' use. A list of these special preparations, containing full particulars of the constituents of each, can be obtained from Messrs. Newbery & Sons, and will be helpful to practitioners.

DIETETIC ARTICLES.

Beef Broth.—This is a new production of Messrs. Brand & Co., whose dietetic preparations are well known to the profession. It is sold in tins in the form of a jelly, and requires only the addition of hot water to make an excellent broth, and it can be given as a jelly if preferred. It is less expensive than the beef essence and can be used freely as an invalid food, for which purpose it is well suited.

Beef Jelly.—The Bovril Co. now prepare a beef jelly, prepared simply by the use of gentle heat, without the addition of water. The result is a strong clear jelly of a very pleasant taste, which will prove useful in those cases where a stimulating food is required in small bulk. It is put up in wide-mouthed glass bottles, easily opened, and is much to be preferred to similar preparations dispensed in tins.

Beef Jelly (Halford's).—This is an excellent beef essence, which appears as a clear jelly. It has a high nutritive power, and pleasant

taste, and may be safely used as a restorative in cases of sickness.

Cerebos Salt.—This appears as a fine white salt very suitable for table use, but differs from ordinary salt in containing the nourishing and strengthening properties of wheaten bran, which are removed from corn in the milling of white flour, but which are none the less essential to vigorous health. The idea is a good one, and is well worked out. The manufacturers deserve and have received considerable support from the medical profession. The salt will be much appreciated by all who use it. It is manufactured by Messrs. Mawson, Swan and Weddell, Newcastle-on-Tyne.

"**Champagne-sans-Sucre.**"—A champagne which can be recommended "freely and advantageously" in cases of diabetes, gout, and rheumatism will be regarded as a boon both by practitioners and those who are dieted by them. A wine stated to possess these desirable qualities has been submitted to us by Messrs. Hertz and Collingwood. It is prepared by the well known wine-growers, Laurent-Perrier & Co., and it is stated that no sugar or alcohol is added in the process of manufacture. We are quite prepared to accept this statement, but we should have preferred to have known more definitely how a sparkling champagne can be produced "sans sucre."

We notice that the "Lancet," in its analytical report, speaks of the "freedom from sugar" in this wine, and that the "British Medical Journal" in one notice, Jan. 20th, 1894, speaks of it as "sugar free," and in another notice, May 12th, as "practically free from sugar," and on August 25th, after giving in detail the analysis of Professor Fresenius, of Wiesbaden, who finds sugar (calculated as dextrose), 0·17 gramme in 100 c.c., states that, "it may be regarded as free from sugar," and that "it can be taken in all cases *in which the presence of sugar, even in small quantities, has to be considered as injurious.*"

These statements justify the manufacturers in asking the medical profession to recommend it in cases of diabetes, gout, and rheumatism, and the fact that the "British Medical Journal" has impressed the value of this wine upon the profession three times in eight months, shows the great appreciation in which it holds it.

Our examination of the wine by two independent analyses of separate samples shows that it contains not less than 55 grains of sugar to the pint, a quantity which, while rendering it deserving of a high place among the "dry" champagnes, is not below the proportions found in other especially "dry" brands, and which renders the name "champagne-sans-sucre" a misleading designation. It perhaps may be explained that the name only implies the absence of "added"

sugar, and the manufacturers probably assume that everyone knows it is impossible to produce a sparkling champagne which is sugar free. But if we allow such arguments, where is the limit to be fixed?

The medical practitioner is so dependent upon the trade description of articles which he is asked to prescribe that we should fail in our duty if we did not take exception to any designation that might lead to error.

The wine itself is good, and its combination with coca, supplied by the same firm, makes an exhilarating tonic beverage which can be recommended with every confidence to a large class of patients, without especially selecting sufferers from diabetes, gout, and rheumatism.

Coca Wine (Hall's)—This wine is particularly noticeable on account of the large quantity of the extract of coca leaf which it contains. The wine used in its manufacture is good, and is well selected for blending with the flavour of the leaf. It is more palatable than some specimens of coca wine we have examined, and is decidedly a valuable preparation for obtaining all the effects of the coca leaf. The manufacturers are Messrs. Stephen Smith & Co., Bow, London, E.

Diabetic Foods.—We have received from G. Van Abbott & Sons a selection of their various foods and biscuits suitable for diabetic patients, and a practitioner, having to put an invalid upon a starch-free diet, can hardly do better than direct his patient to send to 6, Duke Street Mansions, Grosvenor Square, for a sample of each of Messrs. Van Abbott's products. We notice two additions to the list which will be hailed with pleasure by invalids; one is a biscuit made of soya flour flavoured with carraway seed, the other a most palatable ginger biscuit. In both, the amount of starchy matter is reduced to a minimum, and they are decidedly likely to be preferred to most foods of the same class.

Malted Coffee.—Malt has been used in combination with so many foods that it is almost surprising that this is the first malted coffee we have been called upon to notice. Pure coffee is very apt to cause dyspepsia, and it always appears more digestible when mixed with other substances, and none could be better for this purpose than malt, as it also aids the digestion of other foods. We find that the coffee used in this preparation quite conceals the taste of the malt, and that it is a very palatable and wholesome beverage. Messrs. Blackmore, of London, Bristol, and Birmingham are the patentees.

Marrol.—This is an entirely new preparation, consisting of the marrow of ox bones combined with hopped malt extract. The taste is pleasant, and we think children would take it well spread on bread and butter. It will be particularly useful in cases where fatty foods are needed, but are not tolerated by the patient, and should be

tried in cases of phthisis. It is manufactured by the Liquor Carnis Co., and is a distinct addition to our resources for dealing with a difficult class of case.

Meat Juice (Brand's).—Messrs. Brand & Co. have produced a fluid meat juice which is made by submitting beef to pressure in the cold. By this means all the natural constituents of the beef are extracted, and the juice preserves all the flavour of the fresh beef. The large quantity of albuminoid it contains is shown by the fact that it turns quite solid on boiling. It can be safely recommended to invalids, and its taste and nutritive value will cause it to be much appreciated.

Meat Juice (Shepperson's Concentrated).—This is a very excellent preparation of meat juice, manufactured by the Liquor Carnis Co. It contains the albumins and albuminoids in their raw condition in a greater abundance than many other preparations of the same character, and is an invalid food of the highest nutritive value. It is sold, moreover, at a most reasonable price. Nothing has done more to limit the consumption of a form of food invaluable to invalids than the exorbitant price at which most of these preparations are sold. The taste of this preparation is more palatable than most others of its class.

Oat Flour and Oat Flour Biscuits (Midlothian).—These productions of the firm of A. & R. Scott & Co., of Glasgow, are of particular value to invalids because they contain all the flesh-and-bone forming constituents of oatmeal, freed from the husk, which is often irritating to those of weak digestive powers. An analysis of the ash shows that this flour is very rich in phosphoric acid and in salts. The biscuits are as pleasant to the taste as they are nutritious, and we are very glad to have made the acquaintance of these excellent foods, which we can recommend with every confidence.

Pepsin (Essence of).—Under this name Messrs. Armour & Co. have produced a liquid pepsin the colour of a pale sherry, and perfectly bright and clear. It is palatable, and may be taken in doses of 1 or 2 teaspoonfuls after meals. It is a very convenient and reliable method of administering pepsin.

Red Marrow (Extract of).—At a Meeting of the Manchester Medical Society, Professor Dixon Mann said that the red marrow of bone was probably the chief agent in promoting the development of red blood-corpuscles, and at his request Mr. Benger, of Manchester, has prepared an extract which is devoid of any unpleasant taste or odour. It may be given in tea-spoonful doses once or twice a day, either out of the spoon or spread between thin slices of bread. The treatment of a number of patients in the Salford Royal Hospital by

this extract has shown that in each case there was a marked increase —in some of more than a million red corpuscles per cubic millimètre —in from four to nine weeks. Marrow extract appears to be an agent capable of affording valuable aid in the treatment of anæmia, and also of oligæmia due to loss of blood from causes such as placenta prævia, hæmorrhoids, and wounds.

Tea Tabloids.—The advantage of being able to carry the material for producing a hundred cups of pure tea in the waistcoat pocket will commend itself to travellers who know the difficulty of procuring a good cup of tea, even at the best continental hotels, while the price of these tabloids of Messrs. Burroughs, Wellcome & Co., renders them economical even for domestic use.

Whisky.—We have received from Messrs. Margrave Bros., of Llanelly, samples of their Scotch and Irish Whiskies, both of which are well matured spirits, which we can recommend with every confidence; in fact, we can go further, and suggest to our readers that they should sample them for themselves.

Wine of Beef Peptones.—This contains the peptones of beef combined with sherry, and the result is a pleasant wine, of high nutritive power, which undoubtedly can be commended as a stimulant in all forms of exhaustion, as well as an agreeable tonic in cases of convalescence. Messrs. Armour & Co. are the manufacturers.

Cotton-wool Underclothing.—It is difficult to enter into the comparative merits of cotton-wool and animal wool in the matter of underclothing, but there can be no doubt that the materials manufactured by Dr. Lahmann have very much the softness and more porosity than the same class of material made of animal wool when both have been washed for a few times. It appears that the main question depends less upon the actual nature of the material than upon texture, the desideratum being that it should be so woven as to form air-spaces. The air warmed by the body will then form a non-conductor of heat of considerable value, while if the same material were woven with the same closeness of texture as a linen shirt, it would possess all the known disadvantages of such garments. The materials manufactured by Dr. Lahmann (Agency, 15, Fern Street, London) have none of the objectionable qualities of the ordinary cotton underwear, and they are less costly and more durable than those made of sheep's wool. Medical men and others who have used them for some time and can speak from experience, which is the only test in this case, like them better than the woollen goods to which they were previously accustomed.

Lunatic and Idiot Asylums and Homes for Inebriates in Great Britain and Ireland.

We are very anxious to make this list complete, and to give all necessary information; but unless our circular of enquiry—*which in every case is stamped for reply*—is promptly returned, we cannot undertake the responsibility of inserting particulars of an Establishment which may have been closed.

ABERDEEN.—*Royal Asylum.* Res. Med. Sup., Wm. Reid., M.D.; Treasurer, Wm. Carnie, 27, Exchange Street.

ABERGAVENNY.—*Joint Counties Asylum.* Res. Med. Sup., James Glendinning, M.D. Access—G.W.R. Station. ½ mile; L. and N.W. Station, ¾ mile.

ANTRIM.—*Glenside House.* Med. Prop., Dr. Graham.

ARGYLL and BUTE.—*District Asylum,* Lochgilphead. Res. Med. Sup., J. Cameron, M.D. Access—Rail to Greenock, thence by Steamer to Ardrishaig, 2½ miles distant.

ARMAGH.—*Course Lodge.* Richhill, 5 miles from Armagh (for ladies only). Proprietors, James and Wm. Orr; Visiting Physician, Dr. R. Gray. Access—Richhill Station, thence by own Conveyance, 2 miles.
Further information on page 706.

District Asylum. Res. Med. Sup., Dr. W. Graham.

The Retreat. Proprietors, A. D. Allen & Sons. (For 21 male and 15 female patients, higher and middle class.) Res. Med. Sup., Dr. J. Gower Allen. Access—Richhill, thence cab 1½ miles.

AYR.—*District Asylum.* Res. Med. Sup.. C. H. Skae, M.D. Access—Ayr Station, 2 miles.

BALLINASLOE (Co. Galway).—*District Lunatic Asylum.* Res. Med. Sup. R. V. Fletcher, M.D.; Asst. Med. Off.. John Mills, M.B. Access—Ballinasloe.

BANFF.—*District Asylum,* Ladysbridge. Res. Sup., David Fowler. Visiting Physician, Wm. Ferguson, M.D. Access—Ladysbridge Station.

BARNOLDSWICK (Yorkshire).—*Greeta Bank.* Prop., Mrs. Parker. Med. Sup., Dr. Metcalfe. Access—Bentham Station, 2 miles.

BASCHURCH (Shropshire).—*Boreatton Park,* 10 miles from Shrewsbury. Res. Med. Sup., Dr. Sankey. Access—Baschurch Station.
Further information on page 697.

BATH.—*Bailbrook House.* Prop. and Res. Med. Sup., Lionel A. Weatherly, M.D. Access—Bath, 15 minutes' drive.

Further information on page 699.

BECKENHAM (Kent).—*Springcroft.* Prop., Mrs. Stilwell.

BEDFORD.—*Bishopstone House*, Ashburham road (for 10 females). Prop. and Med. Sup., Wm. Simpson Craig, M.D. Access—Bedford.

Further information on page 700.

Springfield House Asylum; 1 hour from London. Res. Med. Sup., D. Bower, M.D. Access—Bedford, 1½ mile.

BELFAST.—*Belfast District Lunatic Asylum.* Res. Med. Sup., A. S. Merrick, M.D.

BEVERLEY.—*East Riding County Asylum.* Res. Med. Sup., M. D. Macleod, M.B. Access—Beverley Station, 2 miles.

BIRMINGHAM.—*Birmingham City Asylum*, Winson Green. Res. Med. Sup., E. B. Whitcombe. Access—Winson Green, ½ mile, Soho, ¼ mile.

BODMIN.—*Cornwall County Asylum.* Med. Sup., Dr. R. Adams.

BOX (Wilts).—*Kingsdown House*, 5 miles from Bath. Res. Med. Sup., Dr. H. C. MacBryan. Access—Box.

Further information on page 700.

BRENTWOOD.—*Essex County Asylum.* Res. Med. Sup., Dr. G. Amsden. Access—Brentwood, ½ mile.

BRIDGEND.—*Glamorgan County Asylum.* Res. Med. Sup., H. T. Pringle, M.D. Access—Bridgend, 1½ miles.

BRISTOL.—*Brislington House*, 2½ miles from Bristol. Res. Med. Supt., Dr. B. B. Fox. Access—Brislington, 1⅓ miles.

City and County Asylum. Res. Med. Sup., Harry A. Benham, M.D. Clerk, Arthur Orme. Access—Fishponds Station, 1 mile.

Northwoods House, Winterbourne, 7 miles from Bristol. Props., Reginald Eager, M.D., and T. G. Seymour. Access—Cab from Bristol, or from Fishponds, Yate, or Patchway Stations.

Further information on page 704.

BROMSGROVE.—*Birmingham City Asylum*, Rubery Hill, near Bromsgrove. Res. Med. Sup., A. C. Suffern, M.D. Access—Rubery Station.

BURGESS HILL.—*St. George's Retreat*, Ditchling. Res. Med. Off., Dr. John A. Cones. Access—Burgess Hill Station.

Further information on page 698.

BUXTON.—*Wye House.* Res. Phys., F. K. Dickson, F.R.C.P. Access—Buxton.

CAMBRIDGE.—*County Asylum*, Fulbourn. Res. Med. Sup., E. C. Rogers, M.R.C.S. Access—Cambridge, 3 miles.

CANE HILL, Purley (Surrey).—*London County Asylum.* Res. Med. Sup., Dr. J. M. Moody. Access—Coulsdon Station, 10 minutes.

CARLISLE.—*County Asylum.* Res. Med. Sup., J. A. Campbell, M.D. Access—Carlisle, 3 miles.

CARLOW.—*District Asylum.* Res. Med. Sup., Dr. T. P. O'Meara. Access—Carlow.

CARMARTHEN.—*Joint Counties Asylum.* Med. Sup., Edwin Goodall, M.D. Access—Carmarthen, 2 miles.

CHARTHAM (Near Canterbury).—*Kent County Asylum.* Res. Med. Sup., G. C. FitzGerald, M.D. Access—Chartham Station, 1 mile.

CHEADLE.—*Manchester Royal Lunatic Hospital.* Res. Med. Sup., G. W. Mould, M.R.C.S. Access, Cheadle, 2 miles.

CHESTER.—*Cheshire County Asylum.* Med. Sup., J. H. Davidson, M.D.

CHURCH STRETTON.—*Stretton House*, Shropshire, (for gentlemen). Med. Sup., Dr. H. Barnett. Access—Church Stretton Station, 10 minutes' walk. *Further information on page* 694.

The Grove House (for ladies). Res. Prop., Mrs. McLintock. Med. Sup., Horatio Barnett, M.A., M.B.

COLCHESTER.—*Eastern Counties Idiot Asylum.* Res. Med. Attend., R. C. Kirkby, M.R.C.S. Eng., L.R.C.P. Lond.; Res. Sup. and Sec., John J. C. Turner. Payment cases received from all parts. Election cases only from Eastern Counties.

CORK.—*District Asylum.* Accommodation for 1,200 patients. Res. Med. Sup., Oscar Woods, M.D. Access—Cork, 1 mile.

Lindville. Med. Prop., Dr. J. Osborne.

CUPAR (Fifeshire).—*Fife and Kinross District Asylum.* Med. Sup., A. R. Turnbull, M.B.

DARLINGTON (Durham).—*Dinsdale Park.* Res. Med. Sup., J. W. Eastwood, M.D., M.R.C.P., Lond. Access—Darlington, 5 miles; Dinsdale, 1 mile.

DARTFORD.—*City of London Asylum*, Stone. Res. Med. Sup., Dr. E. W. White. Access—South Eastern Railway, Dartford, 1 mile.

DENBIGH (North Wales).—*North Wales Counties Lunatic Asylum.* Med. Sup., Dr. Llewelyn F. Cox. Access—Denbigh, 1 mile.

DERBY.—*Borough Asylum*, Rowditch. Res. Med. Sup., Dr. Macphail. Access—Great Northern Station, 1 mile; Mid., 2 miles.

County Asylum, Mickleover. Res. Med. Sup., Dr. Lindsay. Access—Derby, 5 miles, Mickleover, 2 miles.

DEVIZES.—*Wilts County Asylum.* Res. Med. Sup., John Ireland Bowes, M.R.C.S. Access—Devizes, 1 mile.

DORCHESTER.—*Dorset County Asylum.* Med. Sup., P. W. MacDonald, M.D. Access—Dorchester, 3 miles.

DOWNPATRICK.—*District Asylum.* Res. Med. Sup., M. J. Nolan, L.R.C.P., I., and L.M.

DRUMCONDRA (Co. Dublin).—*Hatfield Retreat.* Med. Prop., Dr. Lynch. Vis. Phys. Dr. Matthew Burke Savage. Access—Dublin, 2 miles.

Highfield (for ladies). *Hampstead* (for gentlemen). Med. Prop., John Eustace, M.D. *Further information on page* 699.

DUBLIN.—*Bloomfield*, Donnybrook Road. Med. Supt., Henry T. Bewley, M.D., F.R.C.P., I.

Farnham House and Maryville, 3 miles from Dublin (for 56 patients, both sexes). Prop. and Res. Med. Sup., A. Patton, M.B. Access—Cab from Dublin.

House of St. John of God, Stillorgan. Vis. Phys. Dr. McEvoy. Access—Stillorgan Station, ¼ mile. From Dublin 5 miles.

Richmond District Asylum. Res. Med. Sup., Dr. C. Norman.

Woodbine Lodge, Bathfarnam, 6 miles (ladies). Prop., Mrs. Hayes.

DUDLEY (Stafford).—*Ashwood House*, Kingswinford, Props., Drs. Peacock & Pietersen. Access—Stourbridge Junction, 3 miles, or Dudley Station, 4 miles.

DUMFRIES.—*Crichton Royal Institution.* Med. Sup., James Rutherford, M.D., F.R.C.P., E., etc. Access—Dumfries, 1 mile.

DUNDEE.—*Royal Asylum*, Westgreen. Res. Med. Sup., James Rorie, M.D. Access—Dundee, 3 miles; Liff, 1½ miles.

DURHAM.—*County Asylum*, near Durham. Res. Med. Sup., Robert Smith, M.D. Access—Sedgefield Station, 3 miles, thence by 'Bus.

EARLSWOOD.—*Asylum for Idiots.* Res. Med. Sup., Dr. Harry Corner. Males 400, females 200. Admission by election or payment of 50 to 200 guineas per annum. Apply to Sec., 36, King William Street, London Bridge, E.C. Access—Earlswood Station, close to the Asylum; Red Hill Junction, 1½ miles. Open for inspection Tuesdays between 11 and 5 o'clock. *Further information on page* 697.

EDINBURGH.—*Mavisbank House*, Polton, Midlothian. Res. Med. Sup., G. R. Wilson, M.B. Access—Polton Station, North British Railway, 5 minutes' walk.

Midlothian and Peebles District Asylum. Res. Med. Sup., R. B. Mitchell, M.D. Access—Rosslynlee Station, 1 mile.

Mollendo House, Musselburgh. Prop., P. Mackenzie. Cons. Phys., Thos. R. Scott, M.D. Res. Med. Sup., A. W. Mackenzie, L.R.C.P.,Ed. Access—Musselburgh Stat., 10 minutes' walk.

Further information on page 698.

Royal Edinburgh Asylum, Morningside. Res. Phys. Sup., T. S. Clouston, M.D., F.R.C.P., Ed. Access—Edinburgh, 1½ miles.

Saughton Hall. Res. Med. Sup. and Prop., Dr. John Batty Tuke, M.D., F.R.C.P., Ed. Access—Gorgie Station, 15 minutes.

ELGIN.—*District Asylum.* Med. Sup., J. W. N. Mackay, M.D.

ENNIS.—*District Asylum.* Res. Med. Sup., Richard Phillips Gelston, L.R.C.S., I., L.R.C.P., I. Access—Ennis Station, 1¼ miles.

ENNISCORTHY (Co. Wexford).—*District Lunatic Asylum.* Res. Med. Sup., Thomas Drapes, M.B. Access—Enniscorthy, 1 mile.

EPSOM (Surrey).—*Church Street* (for 14 ladies). Res. Med. Sup., Dr. W. Clement Daniel. Access—Epsom Station, 5 minutes' walk.

EXETER.—*City Asylum*, Heavitree. Res. Med. Sup., R. L. Rutherford, M.D. Access—Exeter, L. and S.W.R., 3 miles; G.W.R., 4 miles.

Court Hall, Kenton. Prop., Mr. Mules. Access—Starcross, 1 mile.

Devon County Asylum, Exminster. Med. Sup., G. Symes Saunders, M.D. Access—Exminster Station, 1 mile ; Exeter, 4 miles.

Wonford House (Hospital for the Insane). Res. Med. Sup., P. Maury Deas, M.B., M.S. Lond. Access—Exeter Stat. (Queen St.) 1½ miles ; (St. David's), 2 miles. *Further information on page* 702.

FAIRFORD (Gloucestershire).—*Fairford Retreat.* Res. Med. Prop., Daniel Iles, M.R.C.S. Access—Fairford Station.

GATESHEAD.—*Dunston Lodge Asylum*, Newcastle and Gateshead. Prop., Mr. W. Garbutt. Res. Med. Sup., Dr. Brough. Access—Newcastle-on-Tyne Station, 3 miles.

GLASGOW.—*District Asylum.* Res. Med. Sup., James H. Skeen, M.B. Access—Bothwell and Fallside Stations, ½ mile.

Royal Asylum, Gartnavel, Glasgow. Res. Phy. Sup., D. Yellowlees, M.D., LL.D.

GLOUCESTER.—*Barnwood House.* Res. Med. Sup., J. G. Soutar, M.B., C.M. Access—Gloucester, 2 miles.

Further information on page 702.

Gloucester County Lunatic Asylums, Wotton and Barnwood, Gloucester. Res. Med. Sup., F. Hurst Craddock, M.A. Oxon, M.R.C.S. Access—Gloucester Station, 1 mile.

GOUDHURST (Kent).—*Tattlebury House* (for 6 males and 2 females). Res. Med. Sup., Dr. J. S. Newington. Access—Goudhurst, 1 mile.

GREAT YARMOUTH.—*Royal Naval Hospital.* Dr. John Wilson, R.N., Fleet Surgeon in charge. Access—Great Yarmouth Station, ½ mile. For Naval patients only, admitted by Admiralty order.

HADDINGTON.—*District Asylum*, 17 miles from Edinburgh. Med. Sup., J. Bruce-Ronaldson, M.D.. F.R.C.S., E., etc. Access—Haddington Station, 10 minutes' walk.

HARPENDEN (Herts.)—*Harpenden Hall*, 4 miles from St. Alban's (for 13 ladies). Prop. and Med. Sup.. A. H. Boys, M.R.C.S., L.R.C.P., Ed. Access—Harpenden Station.

HATTON (near Warwick).—*County Asylum.* Res. Med. Sup., Alfred Miller, M.B. Access—Hatton Station, 2 miles; Warwick Station, 3 miles.

HAYWARD'S HEATH.—*Sussex County Asylum.* Res. Med. Sup., C. E. Saunders, M.D. Access—Hayward's Heath Station, 1½ miles.

HENLEY-IN-ARDEN (Warwickshire).—*Glendossil* (for both sexes). Res. Prop., Dr. S. H. Agar. Access—Great Western Railway.

HEREFORD.—*County and City Asylum.* Med. Sup., T. A. Chapman, M.D.

HITCHIN (Herts), near.—*Three Counties Asylum.* Res. Med. Sup., E. Swain, L.R.C.P. Access—Three Counties Station, 1 mile.

HULL.—*Borough Asylum.* Med. Sup., J. Merson. M.D. Access—Willerby Station, 1 mile.

Craven Street Retreat, Sculcoates. Prop., J. Brown. Access—Hull, 1 mile.

INVERNESS.—*District Asylum.* Med. Sup.. John Keay, M.D.; Asst. Med. Off., W. Russell Strapp, M.B., C.M. Access—Inverness, 2½ miles.

IPSWICH.—*Borough Asylum.* Med. Sup., Dr. E. L. Rowe. Access—Ipswich, 2 miles.

ISLE OF MAN.—*Lunatic Asylum*, Union Mills. Med. Sup., W. Richardson, M.D. Access—Douglas, 3 miles.

ISLEWORTH (Middlesex).—*Wyke House.* Res. Prop., Dr. F Murchison. Access—Isleworth, Brentford, Osterley Stat., 1 mile

IVYBRIDGE (Blackadon).—*Borough Asylum.* Res. Med. Sup., Dr. A. N. Davis. Access—Kingsbridge Road, and Ivybridge 1½ miles.

JERSEY.—*The Grove.* Res. Med. Prop., Francis Neel Gaudin, M.P.C., M.R.C.S. Eng., L.S.A. Lond. 2½ miles from St. Heliers, 2 from St. Aubin's. Access—G.W.R., *via* Weymouth, 4½ hours rail from London, and 5½ hours sea passage; per L. and S.W.R., *via* Southampton, 2 hours rail and 8 hours sea passage.

Further information on page 695.

KILKENNY.—*District Asylum.* Res. Med. Sup., Dr. Wm. Z. Myles.

KILLARNEY.—*District Asylum.* Res. Med. Sup., Dr. L. T. Griffin. Access—Killarney Station, ½ mile.

KINGSTON-ON-THAMES.—*Canbury House.* Prop., W. H. Roots M.R.C.S.

KNOWLE (near Fareham).—*County Asylum.* Med. Sup., T. B. Worthington, M.D.

LANCASTER.—*County Asylum.* Res. Med. Sup., David M. Cassidy, M.D., D.Sc. Access—Lancaster Station.

LEEDS (near Menston). *West Riding Asylum.* Res. Med. Sup., Dr. McDowall. Access—Guiseley Station.

LEICESTER.—*Borough Asylum.* Res. Med. Sup., J. E. M. Finch, M.D. Access—Humberstone G.N.R. ½ mile.

Leicestershire and Rutland Asylum. Res. Med. Sup., Dr. W. H. Higgins. Access—Leicester town, 1 mile.

LETTERKENNY and LONDONDERRY.—*Donegal District Asylum.* Res. Med. Sup., Edward E. Moore, M.D. Access—Letterkenny and Lough Swilley Railway, ½ mile.

LEYTON (Essex).—*The Great House.* Prop., Mrs. Davey.

LICHFIELD.—*County Lunatic Asylum,* Burntwood, near Lichfield. Res. Med. Sup., James Beveridge Spence, M.D. Access—Lichfield City Station, 3½ miles; Trent Valley Station, 4½ miles; Hammerwich, 1½ mile.

LIMERICK.—*District Asylum.* Res. Med. Sup., Dr. E. D. O'Neill.

LINCOLN.—*County Asylum,* Bracebridge. Med. Sup., J. W. Marsh, M.R.C.S. Access—2½ miles from railway station.

The Lawn. Res. Med. Sup., Arthur P. Russell, M.B. Access—Lincoln Station, 1 mile. *Further information on page* 698.

LIVERPOOL.—*Shaftesbury House.* Near Liverpool and Southport. Res. Med. Sup., Stanley A. Gill, B.A., M.D., M.R.C.P., Lond. Access—Formby Station, ¼ mile distant. *Further information on page* 696.

Tue Brook Villa, 3 miles from Liverpool. Res. Med. Sup., Geo. Duffus, M.B. (For 52 males and females.) Access—Tue Brook Stat.

LONDON.—*Bethlem Royal Hospital*, St. George's Road, London, S.E. Res. Med. Sup., R. Percy Smith, M.D., F R.C.P.

Further information on page 701.

Bethnal House, Cambridge Road, N.E. Res. Med. Sup., J. Kennedy Will, M.D. Access—Railway Station near East London Museum.

Brooke House, Upper Clapton. Props., Mr. H. T. Monro and Dr. J. O. Adams; Res. Med. Sup., Dr. J. O. Adams. Access—Clapton Station.

Camberwell House, S.E. Prop., J. H. Paul, M.D. Res. Med. Sup., Frank Schofield, M.D.

Chiswick House, Chiswick, and 37, Albemarle St., W. Res. Lics., T. Seymour Tuke, M.A., M.B., M.R.C.S., and C. M. Tuke, M.R.C.S. Access—Chiswick Station, ¾ mile; Turnham Green Station, ⅓ mile.

County Asylum, Colney Hatch, N. Med. Sup., W. J. Seward, M.B. Access—New Southgate, G.N.Rly.

Featherstone Hall, Southall. Med. Lic., Miss H. E. Dixon. Res. Med. Sups., Drs. Hack, Tuke, and Graves Burton. Access—Southall Station, 5 minutes' walk.

Flower House, Catford, S.E. Res. Med. Sup., C. A. Mercier, M.B. Access—C. and D. Rly., Beckenham Hill, 5 minutes' walk.

Further information on page 703.

Goudhurst, Stanley Road, Teddington. Res. Med. Sup., Dr. R. A. Clarke.

Grove Hall, Bow (both sexes). Med. Lics., Mr. Byas and Dr. Mickle. Access - Bow Road and Bow Stations, ⅛ mile.

Halliford House, Sunbury-on-Thames, S.W. Res. Med. Sup., W. J. H. Haslett, M.R.C.S. Access—Sunbury Station, 1¼ mile.

Further information on page 704.

Hayes, Wood End House (ladies). Uxbridge, 3 miles, London, 12 miles. Med. Lic., Dr. H. Stilwell. Access—Hayes Station, 1 mile.

Hayes Park, Hayes, Middlesex, near Uxbridge. Res. Med. Sup., H. F. Winslow, M.D. Access—Hayes Station, 2 miles.

Hendon Grove Asylum, Hendon, Middlesex. Res. Med. Lic., H. Hicks, M.D. Access—By Mid. Rly., Hendon Station, ½ mile, or 'Bus from Swiss Cottage, St. John's Wood, N.W.

Hoxton House, London, N. Res. Med. Sup., John F. Woods. Access—Shoreditch Station, two minutes' walk; Liverpool Street Station, ten minutes' walk.

London County Asylum, Hanwell, W. Res. Med. Sup., R. R. Alexander, M.D.

Middlesex County Asylum, Banstead, S.E. Res. Med. Sup. T. C. Shaw, M.D. Access—Belmont Station, ½ mile; Sutton Station, 1½ mile.

Middlesex County Asylum, Tooting, S.W. Med. Sup., H. G. Hill, M.R.C.S. Access—Wandsworth Common Station, 1 mile.

Moorcroft House, Hillingdon (males). Uxbridge, 2 miles, London, 13 miles. Med. Licensee, Dr. Stilwell. Access—West Drayton Station, 2 miles.

Newlands House, Tooting, Bec Road, S.W. Prop., Dr. H. Sutherland. Res. Med. Supt., E. T. Hall, M.R.C.S.

Northumberland House, Green Lanes, N. Prop., A. H. Stocker, M.D. Access—Finsbury Park Station.

Otto House, 47, North End Road, Hammersmith, W. Med. Sup., Dr. H. Sutherland. Access—West Kensington Station, ¼ mile.

Peckham House, Peckham, S.E. Prop., Alonzo H. Stocker, M.D. Res. Med. Sup., Harold C. Halsted, M.D. Access—Peckham Rye Station, 10 minutes' walk. *Further information on page* 685.

Peterborough House, Fulham. Res. Med. Sup., Dr. James Robt. Hill. Access—Parsons' Green or Chelsea Station, 5 minutes' walk.

Silverton House, Peckham Rye. Prop., Mrs. A. G. Preston.

St. Luke's Hospital, Old Street, E.C. Med. Sup., G. Mickley, M.B.

Sutherland House, Surbiton, nr. Kingston-on-Thames (ladies). Res. Med. Sups., Robt. Collum, M.D., M.R.C.P., Lond. Access, Surbiton. ¼ mile.

The Huguenots, East Hill, Wandsworth, S.W. (ladies). Prop., Miss Leech. Med. Off., Dr. G. F. Blandford. Access—Clapham Junction Station, 10 minutes; Wandsworth, 3 minutes.

The Priory, Roehampton, S.W., near Richmond. Res. Med. Sup., James Chambers, M.D. Access—Barnes Station, 8 minutes' walk.

Vine Cottage, Norwood Green, Southall. Prop., Mrs. Oliver. Med. Sup., Dr. Thornton. Access—Southall Station, 1 mile.

LONDONDERRY.—*District Asylum.* Res. Med. Sup., Dr. Hetherington.

MACCLESFIELD.—*Parkside Asylum.* Res. Med. Sup., T. Steele Sheldon, M.B., Lond. Access—Macclesfield Station, 1 mile.

MAIDSTONE.—*Kent County Asylum.* Res. Med. Sup., F. Pritchard Davies, M.D. Access—Maidstone Station, 1½ miles.

West Malling Place (for ladies). *Castle House* and *Winthies Cottage* (for gentlemen). Res. Med. Sup., Dr. James Adam. Access—Malling Station, 1 mile.

MARKET LAVINGTON (Wilts).—*Fiddington House.* Prop. and Res. Med. Sup., C. Hitchcock, M.D. Access—Devizes Station, 6 miles. *Further information on page* 701.

MELROSE, N.B.—*Roxburgh District Asylum.* Res. Med. Sup., J. C. Johnstone, M.D. Access—Melrose, 1 mile.

MELTON.—*Suffolk County Asylum,* Melton, near Woodbridge. Res. Phys. and Sup., Wilson Eager, L.R.C.P. Access—Melton Station, 1¼ mile; Woodbridge Station, 2¼ miles.

MONAGHAN (Ireland).—*District Asylum,* Res. Med. Sup., Dr Edward Taylor. Access—Monaghan, ¼ mile.

MONTROSE, N.B.—*Montrose Royal Lunatic Asylum.* Phys. Sup., J. C. Howden, M.D. Access—Hillside Station, ¼ mile; Dubton Station, 1 mile.

MORPETH.—*Northumberland County Asylum.* Res. Med. Sup., Thos. W. McDowall, M.D. Access—Morpeth Station, 1 mile, by 'Bus.

MULLINGAR.—*District Asylum.* Res. Med. Sup., Dr. A. D. O. Finegan.

NELSON (Lanc.).—*Marsden Hall* (for both sexes). Res. Prop., Mrs. Bennett: Med. Sup., Dr. A. P. Millar. Access—Nelson or Colne Stations, 1½ miles.

NEWCASTLE-ON-TYNE.—*City County Asylum,* Gosforth. Res. Med. Sup., Jas. Thomas Callcott, M.D. Access—Newcastle, 1 mile.

NEWTON-LE-WILLOWS.—*Haydock Lodge Asylum.* Med. Prop., E. H. Beaman, M.R.C.S., Ed.; Res. Med. Sup., Dr. C. T. Street. Access—Newton-le-Willows Station, 2 miles.

Further information on page 705.

NORTHAMPTON.—*Berrywood Asylum* Res. Med. Sup., R. Greene, F.R.C.P., Ed. Access—Castle Station, 2 miles; Midland Station, 2½ miles.

St. Andrew's Hospital. Med. Sup., J. Bayley, M.R.C.S.

NORWICH.—*Heigham Hall.* Licensees, Mrs. Watson and Mr. Alfred Mottram. Res. Med. Sup., Thos. J. Compton, M.D.

Norfolk County Asylum. Thorpe. 800 Beds. Res. Med. Sup., David G. Thomson, M.D. Access—Norwich (Thorpe) Station, 2½ miles.

Norwich City Asylum, Hellesdon. Res. Phys. and Sup., Dr. Wm. Harris, F.R.C.S.; Hon. Con. Phys., Sir Frederic Bateman, F.R.C.P.; Res. Asst. Med. Officer, Dr. A. Sykes. Acc.—Thorpe, cab fare 4/-; Victoria Station, cab fare 3/6; City Station, fare 3/-; Hellesdon Station, 1 mile.

The Bethel Hospital for the Insane. Res. Med. Sup., J. Fielding, M.D.; Con. Phys., Sir Frederic Bateman, F.R.C.P. Access—Thorpe Station, 1 mile.

NOTTINGHAM.—*Borough Asylum*, Mapperley Hill. Med. Sup., E. Powell, M.R.C.S.

Notts County Asylum, Snenton. Res. Med. Sup., Dr. A. Aplin. Access—Mid. and Gt. North. Station, about 15 minutes' walk.

The Coppice. Res. Med. Sup., W. B. Tate, M.D. Access—Mid. and Gt. North. Station, 2½ miles.

OMAGH.—*District Asylum.* Res. Med. Sup., Geo. E. Carre, M.B. Access—Omagh Station, 2 miles.

OXFORD.—*Oxford County Asylum.* Res. Med. Sup., R. H. H. Sankey, M.R.C.S. Access—Littlemore Station, G.W.R.

Warneford Asylum, Oxford 1½ mile (for private patients only), Res. Med. Sup., J. Bywater Ward, M.D. Access—Oxford Station, 2¼ miles. *Further information on page* 701.

PERTH.—*District Asylum*, Murthly. Med. Sup., Geo. M. Robertson, M.B., F.R.C.P., Edin.

James Murray's Royal Asylum (for private patients only), Perth. Access—Perth, under 2 miles.

PLYMOUTH.—*Plympton House*, Plympton, S. Devon. Res. Med. Sup., Charles Aldridge, M.D. Access—Plympton, 1 mile; Mills, 2 miles. *Further information on page* 703.

PORTSMOUTH.—*Borough Asylum*, Res. Med. Sup., W. C. Bland, M.R.C.S. Access—Fratton Station, 2 miles.

PRESTWICH (near Manchester).—*County Asylum.* Res. Med. Sup., Henry R. Ley, M.R.C.S.

RAINHILL (near Prescot).—*County Asylum.* Res. Med. Sup., J. Wiglesworth, M.D. Access—St. Helen's, 2 miles; Liverpool, 10 miles.

ROTHERHAM (Yorkshire).—*The Grange*, near Rotherham, 5 miles from Sheffield (for ladies). Res. Med. Prop., C. Clapham, M.D. Access—Grange Lane Station, ¼ mile.

SALISBURY.—*Fisherton House Asylum.* Med. Sup., William Corbin Finch, M.D. Access—Salisbury Stat., 5 minutes' walk.

Laverstock House. Prop., J. Haynes : Med. Sup., Hy. J. Manning, M.R.C.S.

SHREWSBURY.—*Salop and Montgomery Counties Lunatic Asylum.* Res. Med. Sup., Arthur Strange, M.D. Access—Shrewsbury Station, 2½ miles.

SLIGO.—*District Asylum.* Res. Med. Sup., Dr. Joseph Petit. Access—Midland, Great Western and Sligo, Leitrim and Northern Counties Railways, Sligo Station, 1½ miles.

STAFFORD.—*County Lunatic Asylum.* Res. Med. Sup., Dr. J. W. Stirling Christie. Access—Stafford Station, about 1 mile.

Institution for the Insane. Coton Hill, Med. Sup., Dr. R. W. Hewson.

STARCROSS (near Exeter).—*Western Counties Idiot Asylum.* Res. Sup., William Locke. Access—Starcross Station, 5 minutes' walk.

STIRLING.—*District Asylum.* Med. Sup., Dr. J. MacPherson.

ST. LEONARDS-ON-SEA.—*Ashbrook Hall,* Hollington (for ladies). Res. Prop., Mrs. Letitia A. Hitch. Access—Station, Warrior Square, St. Leonards-on-Sea, half-an-hour's walk.

STONE (near Aylesbury).—*Bucks County Asylum.* Res. Med. Sup., J. Humphry, M.R.C.S. Access—Stone, 3 miles from Aylesbury.

SUTTON (Surrey).—*Chalk Pit House.* Prop., F. D. Atkins, M.R.C.S.

TAMWORTH (Staffs.).—*The Moat House* (for ladies). Res. Prop., E. Hollins, M.A. Med. Attendants, J. Holmes Joy, M.D., and S. H. Harrison, L.R.C.P., Lond.

TICEHURST (Sussex).—*Asylum.* Props., H. F. H. Newington, M.R.C.P., and A. S. L. Newington, M.B.

TONBRIDGE.—*Redlands.* Res. Phys., W. M. Harmer, F.R.C.P. Access—Tonbridge Station, 2½ miles.

VIRGINIA WATER.—*Holloway Sanatorium, Hospital for the Insane.* St. Ann's Heath, Virginia Water. Res. Med. Sup., Sutherland Rees Philipps, M.D. Asst. Med. Officers, A. N. Little, M.B., W. D. Moore, M.D., Emily L. Dove, M.B. Chaplain, Rev. T. W. Armstrong, M.A. Treas. John Ashby, Esq., Staines. Access—Virginia Water Station, 5 minutes' walk. Seaside Branch, Hove Villa, Dyke Road, Brighton. Med. Off., E. Noble Edwards, M.R.C.S.

WADSLEY (near Sheffield).—*West Riding of Yorkshire Asylum.* Res. Med. Sup., W. S. Kay, M.D. Access—Wadley Bridge, 2 miles.

WAKEFIELD.—*West Riding Asylum.* Res. Med. Sup. and Director, W. Bevan Lewis, L.R.C.P., Lond. Access—Kirkgate and Westgate Stat., 1 mile.

WALLINGFORD (Berks).—*Berks County Asylum.* Res. Med. Sup., J. W. A. Murdoch, M.B. Access—Cholsey, 1 mile.

WARWICK.—*Midland Counties Idiot Asylum.* Knowle. Res. Sup. and Sec., W. G. Blatch; Med. Officer, R. H. Foster, M.R.C.S. Access—Knowle Station, ½ mile.

WATERFORD.—*District Asylum* Res. Med. Sup., Dr. R. Atkins. Access—Waterford and Kilkenny Railway Station, about 2 miles.

St. Patrick's Institution, Belmont Park. Sup., Br. W. J. Becker. Med. Sup., Dr. W. R. Connolly.

WELLS.—*Somerset and Bath Asylum*, Wells, Somerset. Res. Med. Sup., A. Law Wade, M.D. Access—Wells, 2 miles; Masbury, 2½ miles.

WHITCHURCH (Salop).—*St. Mary's House* (ladies only). Med. Sup., S. T. Gwynn. M.D. Access—Whitchurch Station, 1½ miles.

WHITEFIELD (near Manchester).—*Overdale.* Res. Med. Sup., James Holmes, M.D. Access—Prestwich and Whitefield Stations, 1½ miles each; Molyneux Brow, ¼ mile.

WHITTINGHAM (near Preston).—*County Asylum.* Res. Med. Sup., Dr. Frank Perceval. Access—Grimsargh Station, 1¾ miles; Whittingham Station, 3 minutes.

WINCHELSEA (Sussex).—*Periteau House*, near Hastings (ladies only), Proprietress, Mrs. R. V. Skinner. Res. Med. Sup., E. W. Skinner, M.D. Access—Winchelsea Station, 1 mile.

WOKING.—*Surrey County Asylum*, Brookwood. Res. Med. Sup., Dr. J. E. Barton. Access—Brookwood Station, 1¼ miles.

WORCESTER.—*County and City Lunatic Asylum*, Powick. Res. Med. Sup., E. Marriott Cooke, M.B. Access—Worcester Station, 4½ miles.

YORK.—*Lawrence House* (for 8 males and 14 females). Prop. and Med. Sup., G. I. Swanson, M.D. Access—York.

North Riding of Yorkshire Asylum. Res. Med. Sup., J. Tregelles Hingston. Access—York, 2 miles.

The Friends' Retreat. Res. Med. Sup., Bedford Pierce, M.D., M.R.C.P., Lond.

York Lunatic Asylum, Bootham. Res. Med. Sup., C. K. Hitchcock, M.D., M.A., Cantab. Access—York, 1 mile.

TRAINING INSTITUTIONS.

CHILCOMPTON (near Bath).—*Downside Lodge.* Med. Sup., Alex. Waugh, M.D. Access—Chilcompton Station, about ¼ mile.
Further information on page 706.

DUNDEE.—*Baldovan Asylum.* For the Training and Education of Imbecile Children. Matron, Miss Butter. Vis. Phys., Dr. Greig. Access—Baldovan, 1 mile.

KINGSTON-ON-THAMES (Surrey).—*Winchester House*, Kingston Hill. Training Institution for backward and feeble-minded children. Res. Med. Supt., Dr. Fletcher Beach. Access—Norbiton Station, South Western Railway, 15 minutes' walk.
Further information on page 706.

KINGSTON-ON-THAMES.—Normansfield Training Institution (for backward and feeble-minded children). Med. Sup., Dr. Langdon Down. For 100 male and 60 female patients of the upper class. Access—Hampton Wick Station, 5 minutes' walk.

LANCASTER.—*Royal Albert Asylum* (for idiots and imbeciles of the Northern counties. For 600 patients). Principal and Sec., James Diggens. Res. Med. Sup., Telford Smith, M.A., M.D. Admission by election, or at various rates of payment. Access—Lancaster Station, 1 mile.
Further information on page 707.

Brunton House, a Home for special Private Pupils under training at the Royal Albert Asylum. Private Pupils received from all parts of the country. Principal and Sec., James Diggens. Access as above.
Further information on page 707.

LONDON (Upper Norwood).—*Grosvenor*, 84, Auckland Road. Prop., Miss Arkell.
Further information on page 700.

MAIDSTONE (Kent).—*Bearsted House.* School and Home for the Feeble-minded. Res. Sup. and Prop., G. T. A'Vard. Access—Bearsted Station (Chatham and Dover Railway), 5 minutes' walk.
Further information on page 705.

RICHMOND (Surrey).—*Ancaster House.* Richmond Hill. For mentally-feeble children (*not* idiots). Res. Med. Sup., G. E. Shuttleworth, B.A., M.D. Acc.—Richmond Stat., L. & S.W.R., Metropolitan, District and North London Railway, 1 mile.
Further information on page 707.

Homes for Inebriates.

Homes marked thus (*) are licensed under the Inebriates Act.

The patient must sign a Form expressing a wish to enter the retreat, before two magistrates. This can be done at the private residence of the patient, or at the retreat. Two friends must also sign a declaration that they consider the patient an "Inebriate" within the meaning of the Acts.

BRISTOL.—*Dunmurry*, Sneyd Park, near Clifton. Res. Med. Prop., Dr. James Stewart, B.A., F.R.C.P. Ed., and Mrs. Stewart. Access—Bristol or Clifton Down Station, 1¼ mile from the latter.

Further information on page 710

Kingswood Park. Res. Med. Sup., Dr. R. W. Brimacombe. Access—Mangotsfield 2 miles; Bristol 4 miles; Bath 8 miles.

CROYDON.—*St. Raphael's*, Woodside. Apply Rev. A. Tooth. Access—Woodside Station, Croydon.

EARL'S COLNE (Essex).—*Buxton House* (for ladies). Prop., Miss Pudney; Med. Attendant, J. Taylor, M.R.C.S. Access—Colne, 2 miles; Chappel, 3 miles.

FOLKESTONE.—**Capel Lodge* (Near Folkestone.) Res. Prop., E. Norton, M.D. Access—Folkestone Junction, 2 miles.

Further information on page 664.

LEICESTER.—*Tower House* (for ladies). Prop., Mrs. Theobald; Med. Attendant, Dr. Clarke. Access—Leicester Station, 1½ miles.

MANCHESTER (near).—*The Grove*, Fallowfield.

MIDDLESEX.—**High Shot House*, Twickenham. Res. Med. Sup., F. H. Bromhead, B.A., M.B. Camb., M.R.C.S. Eng., L.R.C.P. Lond. Access—St. Margaret's Station from Waterloo, 300 yards.

Further information on page 704

RICKMANSWORTH (Herts).—**Dalrymple Home* (for 20 male patients). Res. Med. Sup., R. Welsh Branthwaite, L.R.C.P. Access—Rickmansworth Station, Metropolitan Rly., ½ mile; L. & N.W. Rly., 1 mile.

Further information on page 702.

STONEHAVEN (N.B.).—*Elsick House.* Prop., D. Forbes.

SYDENHAM.—*Women's Temperance Home.* Hon. Sec., Miss Bagster. Med. Sup., Dr. Gardner. Access—Sydenham, 3 minutes.

WALSALL.—**Old Park Hall Retreat.* Birmingham, 6 miles. Res. Med. Sup., Fredk. John Gray. Access—Walsall Station, 1¾ mile.

WESTGATE-ON-SEA.—**Tower House Retreat* (for ladies and gentlemen). Principal and Licensee, A. F. Street, M.A., M.D.

Hydropathic Establishments of Great Britain.

We wish to make this list complete, but it is impossible when some Proprietors do not return our letter of enquiry which is *stamped for reply*. This will account for some omissions in the present edition.

ABERDEEN.—*Deeside Hydropathic Establishment*, Heathcot, near Aberdeen.—Res. Med. Sup., Alexander Stewart, M.D., LL.D., F.A.S. Access—Rail to Aberdeen, thence by cab or omnibus. Hydropathic conveyance meets any train when sent for, distance 5 miles.

Further information on page 709.

BASLOW (near Chesterfield). *Baslow Hydropathic Establishment*, near Chatsworth Park, Derbyshire. Res. Med. Sup., E. M. Wrench, F.R.C.S. Access—Rowsley Station, 4½ miles by omnibus.

BATH.—*West of England Hydropathic Establishment*, Limpley Stoke, near Bath. Res. Phys., C. J. Whitby, M.D. Access—Limpley Stoke Station.

BEN RHYDDING.—*Ben Rhydding*. Near Leeds, Bradford, or Harrogate. Phys., Thos. Johnstone, M.D., M.R.C.P. Access—Ben Rhydding Station, a few hundred yards.

BISHOPS-TEIGNTON (near Teignmouth).—*The South Devon Health Resort*. Prop., C. F. Carpenter. Med. Sup., F. Cecil H. Piggott, M.D. Access—Teignmouth Station, 2½ miles.

BORTH (Cardiganshire).—*Hydropathic Establishment*. Med. Sup., J. Harden Jones, M.R.C.S.

BOURNEMOUTH (Hampshire).—*Bournemouth Hydropathic Establishment*. Res. Prop., Dr. Watson. Access—Bournemouth, East Station, 1½ mile; West Station, ½ mile.

Southcliffe. Res. Prop., E. P. Philpots, M.D.

Further information on page 709.

BRIDGE OF ALLAN.—*Bridge of Allan Hydropathic Co.* Manager, J. M'Kay. Access—Bridge of Allan Station, ½ mile.

BRISTOL.—*The Bristol Hydropathic Establishment* (formerly Bartholomew's Turkish Baths), College Green. Res. Phys., W. J. Spoor, M.B., M.R.C.S.

BUTE.—*Kyles of Bute Hydropathic*, Port Bannantyne, Buteshire. Man., A. Menzies; Med. Sup., Dr. A. J. Hall. Access—Clyde Steamers call daily.

BUXTON.—*Buxton House Hydropathic*, adjoins "The Peak Hydro." Cons. Phys., S. Hyde, M.D. Distance from Station, 4 minutes.

Buxton Hydropathic and Winter Residence. Prop., Mr. H. Lomas. Access—Buxton Station, 4 minutes' walk.

The Peak Hydro-Thermal Establishment and Mineral Water Baths. Cons. Phys., S. Hyde, M.D. 4 minutes from Station.

COLWYN BAY (North Wales).—*Colwyn Bay Hydropathic and Winter Residence.* Med. Sup., Dr. W. M. V. Williams. Access—Colwyn Bay Station, 7 minutes' walk.

CORK.—*St. Ann's Hill Hydropathic.* Res. Phys., M. Altdorfer, M.D. Access—Blarney Station, 2½ miles distant; Muskerry Light Railway from Cork, Station on grounds.

Further information on page 711.

CRIEFF.—*Strathearn House* (17 miles from Perth). Res. Med. Sups., Thos. H. Meikle, M.D., J.P., and T. Gordon Meikle, M.B., C.M. Access—Crieff Station, 1 mile.

DUNBLANE.—*Dunblane Hydropathic*, Perthshire. Res. Phys. Access—Dunblane Station. *Further information on page* 708.

EDINBURGH.—*Hydropathic.* James Bell, Man. Director. Access—Merchiston Station, 1 mile; Waverley Station, 3 miles.

Folkestone Bathing Establishment Co., Limited. Access—Shorncliff, Radnor Park, and Junction Stations.

FORRES.—*Cluny Hill Hydropathic.* Access—Forres Station, 1 mile; Inverness, 24 miles.

GRANGE-OVER-SANDS.—*Hazelwood Hydropathic.* Con. Phys., Dr. Lowther. Access—Carnforth, London and North Western Railway, and thence by Furness Railway. Grange-over-Sands, ¼ mile.

HARROGATE (Yorkshire).—*The Cairn Hydropathic.* A. E. Wynn, Manager; Med. Sup., J. Gordon Black, M.D.

The Harrogate Hydropathic Establishment. Phys., Geo. Tennant, M.B.

HASTINGS (St. Leonard's).—*The Hastings Hydropathic and Spa* Access—Hastings Station, 1 mile.

HEXHAM (**Northumberland**).—*Tynedale Hydropathic.* Prop., F. G. Grant; Med. Sup., Thos. Stainthorpe, M.D. Access—Hexham; Newcastle, 19 miles.

ILKLEY (**Yorkshire**).—*Craiglands Hydropathic.* Props., Dobson Bros. Med. Sup., Henry Dobson, M.D., C.M.

Ilkley Wells House Hydropathic. Med. Sup., Thos. Scott, M.D. Access—Ilkley Station, ¼ mile.

The Spa Hydropathic. (Near Leeds and Bradford.) Med. Sup., Thos. Johnstone, M.D. Access—Ilkley, Yorks and Mid. Rys.

Troutbeck Hydropathic Establishment and Sanatorium. Res. Med. Sup., Henry Dobson, M.D., C.M. Props., Dobson Bros.

KILMALCOLM (**Renfrewshire**).—*Hydropathic Establishment.* Manageress, Miss G. Thomson. Access—Greenock, 7 miles, thence by steamer. Kilmalcolm, 1 mile.

LLANDUDNO.—*Hydropathic and Winter Residence.* Res. Med. Sup., H. Thomas, M.D., F.R.M.S. Access—Llandudno Station, 5 minutes.

The Hydro. Med. Sup., J. Craig, M.D. Access—Llandudno Station, 2 minutes.

MALVERN.—*Dr. Fergusson's* late *Dr. Rayner's Hydropathic.* Res. Prop., Dr. J. C. Fergusson. Access—Great Malvern Station, ½ mile.

Further information on page 711.

Wyche-side Hydropathic. Res. Phys., Dr. Grindrod. Access—Malvern Wells G. W. Station, ½ mile.

MATLOCK.—*Darley Dale Hydropathic.* Prop., Wm. Atkin; Med. Sup., Dr. W. Moxon. Access—Matlock Bridge Station, 2 miles; Darley Dale, ½ mile.

Elm Tree House. Prop., Wm. Bramald. Med. Sup., Dr. Hunter. Access—Matlock Bridge Station, ½ mile.

Roseberry House, Matlock Bank, Matlock Bridge. Med. Sup., Dr. Moxon. Prop., Mrs. J. L. Dean. Access—Near Matlock Bridge Station.

Smedley's Hydropathic Establishment, Matlock Bridge. Phys., Wm. B. Hunter, M.D., and W. C. Sharpe, M.B., with a House Phys. Access—Matlock Bridge Station, ½ mile; Omnibus.

Further information on page 711.

MELROSE.—*Waverley Hydropathic.* Con. Phys., Dr. Wade. Access—Melrose Station, 1 mile.

MOFFAT.—*The Moffat Hydropathic.* Prop., J. Farquharson.

PEEBLES.—*Peebles Hydropathic.* Access—Peebles Station, 1 mile.

PITLOCHRY.—*Atholl Hydropathic.* Prop., W. Macdonald. Access—Pitlochry Station, 1 mile.

RHYL.—*North Wales Hydropathic.*

ROTHESAY.—*Glenburn Hydropathic.* Res. Prop., Dr. Philp.

SCARBOROUGH—*Hydropathic Establishment*, West Bank. Prop., R. B. D. Wells. Med. Attendant, Dr. Megginson.
Further information on page 709.

SHANDON.—*Shandon Hydropathic.* Med. Sup., Surg.-Major R. D. Reid, M.D. Access—Nor. Brit. Railway & Steamer to Shandon Pier.

SOUTHPORT.—"*Sunnyside*" *Hydropathic.* Prop., J. Boocock. Phys., Dr. F. A. Ernest Barnardo. Access—Southport Station, ½ mile. *Further information on page* 710.

Hydropathic House. Props., Lee & Hardman.

The Southport Limes Hydropathic (51, Bath Street). Phys. and Surg., Dr. A. B. Kenworthy. Access—Chapel Street, Lord Street or Central Stations ¼ mile.

The "*Mornington.*" Prop., James Cowin.

TUNBRIDGE WELLS.—*The Spa.* Phys., Dr. G. L. Pardington. Access—Tunbridge Wells Station, about ½ mile.

ULVERSTON AND BARROW-IN-FURNESS.—*Conishead Priory Hydropathic.* Res. Med. Sup., C. E. Stechan, M.B. Access—Carnforth or Hellifield Stations.

WATFORD.—*The Hall*, Bushey. Res. Phys., R. J. Banning, M.D., J.P. Access—Bushey Station, 1 mile.

WEMYSS BAY.—*Wemyss Bay Hydropathic.* Med. Sup., Ronald Currie, M.D., C.M. Access—Wemyss Bay Station, *via* Glasgow, ½ mile.

WINDERMERE.—*Windermere Hydropathic*, 9 miles from Kendal. Access—Windermere Station (L. & N. W. R.) about 1 mile. Furness Rly. (Bowness Landing), ¼ mile. Pier on the Lake, about 300 yards.

Private Homes for Invalids.

BOURNEMOUTH.—*Overton Hall*, West Cliff. Res. Prop., Dr. A. H. Watson.

JEDBURGH.—*Abbey Green.* Res. Prop., Wm. Blair, M.D. Access—N. B. Rly., Jedburgh. *Further information on page* 698.

LLANDUDNO.—*Ormeside.* Access—Llandudno Station, ¾ mile.

SOUTHPORT.—8, Manchester Road (for ladies). Prop., Mrs. Krause. *Further information on page* 688.

Books of the Year.

A List of the Principal Medical Works and New Editions Published during 1894.

AMBULANCE AND NURSING.

Ambulance: Manual of. By J. S. Riddell. Numerous Illusts. and Full-page Plates. Cr. 8vo. pp. 222. *Griffin.* 4/-

Ambulance Lectures: First Aids to the Injured. By S. Osborn. 3rd ed., with Illusts., 12mo, pp. 146. *Lewis.* 2/-

Care of the Sick at Home and in the Hospital: A Handbook for Families and Nurses. By T. Billroth. 3rd ed. Cr. 8vo, pp. 326. (25) 6/-

First Aids to the Injured and Management of the Sick. By E. J. Lawless. Cr. 8vo., pp. 228. Illusts. *Pentland* 3/6

Manual of Nursing, Medical and Surgical. By L. Humphry. Illusts. 11th ed. Cr. 8vo, pp. 254. *Griffin.* 3/6

Massage: Nurses Guide to. By S. Hyde. 3rd ed. Roy. 16mo, pp. 63, limp. (28) 3/6

Medical Nursing: Notes of Lectures Given to the Probationers at the London Hospital. By J. Anderson. Edited by Ethel F. Lamport. With an Introductory Biographical Notice by Sir Andrew Clark. Cr. 8vo, pp. 192. *Lewis.* 2/6

Nursing Old Age. By Mary Truman and Edith Sykes. Cr. 8vo, pp. 146. *Roxburghe Press* 2/6

The Nurse's Dictionary of Medical Terms and Nursing Treatment. By Honnor Morten. 2nd ed. 32mo, pp. 140. *Scientific Press.* 2/-

ANATOMY AND PHYSIOLOGY.

Anatomical Model (Phillips'): A Pictorial Representation of the Human Frame and its Organs. With Descriptive Text by Dr. Schmidt. English ed. by William J. Furneaux. Illusts. Roy. 8vo. (88) *Net* 2/-

Anatomy of the Nasal Cavity, and its Accessory Sinuses. An Atlas for Practitioners and Students. By A. Onodi. Trans. and Ed. by St. Clair Thomson. Plates. Roy. 8vo. *Lewis.* . . . . . *Net* 6/-

Dissections. By C. G. Brodie. Illusts. Part 3, Head, Neck, and Thorax. Imp. 8vo, sd. *Whittaker.* 10/-

Elements of Anatomy (Quain's). Edit. by Schafer and Thane. 3 vols. Vol. 3, Pt. 3: Organs of the Senses. By Professor Schafer. 10th ed. Roy. 8vo. (13) 9/-

Handbook of Physiology. Being a Popular Description of the Human Body; its Structure and Functions in Health and Disease. Cr. 8vo. Paper Covers. New ed. (57) 1/-

Human Physiology. By J. Thornton. With 268 Illusts., some coloured. (Advanced Science Manuals.) Cr, 8vo, pp. 436. (13) . . 6/-

Kirke's Handbook of Physiology. Ed. by W. Morrant Baker and V. D. Harris. With 500 Illusts. Post 8vo. (31) 14/-

Physiology. Part 3 (Catechism Series) : Blood Respiration. Part 4: Digestion, including Mouth, Stomach, Pacreas and Liver. Part 7: Eye, Ear, and Cranial Nerves. Part 8 : Spinal Cord, Brain, Reproduction. Physiological Chemistry. *Livingstone.* . . *each, Net* 1/-

Physiology of the Carbohydrates. By F. W. Pavy. 8vo, pp. 280. (5) 10/6

Physiology of Death from Traumatic Fever: A Study in Abdominal Surgery. By J. D. Malcolm. 8vo, pp. 129. (5) - - - 3/6

Practical Anatomy: Manual of. By D. J. Cunningham. In 2 vols. Vol. 2: Thorax, Head and Neck. Illusts. Cr. 8vo, pp. 646. *Pentland. Each*, 12/6

Practical Morbid Anatomy. By H. D. Rolleston and A. A. Kanthack. 12mo. *Lewis.* 6/-

The Frog: An Introduction to Anatomy, Histology, and Embryology. By the late A. Milnes Marshall. 5th ed. Revised and Illust. Cr. 8vo. (23) 4/-

CHEMISTRY.

Blood: The Chemistry of the, and other Scientific Papers. By the late S. C. Wooldridge. Arranged by Victor Horsley and Ernest Starling. Demy 8vo. (9) 16/-

Qualitative Analysis for use in instruction in Clinical Laboratories. By L. Medicus. Trans. by. J. Marshall. 8vo. (42) . . . 7/6

CHILDREN (Diseases of).

Artificial Feeding of Infants: On the Principles and Exact Conditions to be observed in the. The Properties of Artificial Foods, and the Diseases which Arise from Faults of Diet in Early Life. By W. B. Cheadle. 3rd ed. Revised and Enlarged. Cr. 8vo. (23) . 5/-

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Growing Children and Awkward Walking. By T. W. Nunn. Cr. 8vo, pp. 108 (9) 2/-

Prescribing and Treatment in the Diseases of Infants and Children. By P. E. Muskett. 3rd ed., Revised, Enlarged and Re-arranged. 18mo. *Pentland.* 6/6

DENTISTRY.

Dental Anatomy: Manual of. Human and Comparative. By C. S. Tomes. With 235 Illusts. 4th ed. Cr. 8vo, pp. 567. (5) . 12/6

Dentists' Register for 1894. (69) 3/4

Mechanical Dentistry. By. J. Richardson. New ed. By G. W. Warren. Illusts. 8vo, pp. 662. (5) 21/-

The Dental Surgeon's Daily Diary and Appointment Book. Med. 8vo, Cloth, Gilt Lettered. (77) 6/-

EAR, THROAT AND NOSE.

Deaf-Mutism. By Holger Mygind. Cr. 8vo, pp. 300. (46) . 8/-

Diphtheria and its Successful Treatment: Practical Treatise on. By B. R. Martin. Cr. 8vo. (3) 1/6

Diseases of the Ear. By M. Hovell. 8vo. (5) . . . 18/-

Diseases of the Ear: Manual of. By George P. Field. 5th ed. Illust. with coloured Plates and Woodcuts. 8vo, pp. 420. (3) . 12/6

Diseases of the Ear: Practitioner's Handbook of. By H. Macnaughton-Jones and W. R. H. Stewart. 5th ed. Cr. 8vo, pp. 404. (3) 10/6

Diseases of Nose and Pharynx: Handbook of. By J. B. Ball. 2nd ed. With 49 Illusts. Cr. 8vo, pp. 368. (3) 7/6

Diseases of the Throat: Clinical Manual for the Study of. By J. W. Downie. Cr. 8vo, pp. 280. (1) . . . . . *Net* 6/-

Diseases of the Upper Respiratory Tract: The Nose, Pharynx and Larynx. By P. Watson Williams. With Frontispiece, 5 Coloured Plates, and 120 Illustrations. 8vo, pp. 260. *Wright* (Bristol) 8/6

Nose and Throat: Diseases of the. By. J. D. Havilland Hall. With 2 Coloured Plates and 59 Illusts. Cr. 8vo, pp. 532. *Lewis*. . 10/6

Pharmacopœia of the Hospital for Diseases of the Throat (Golden Square). Edit. by F. G. Harvey. 5th ed. Fcap. 8vo, pp. 112. (5) 2/6

Post Nasal Growths. By C. A. Parker. 8vo, pp. 104. *Lewis*. 4/6

Stammering: Its Nature and Treatment. With Appendix on Voice Production in Speaking. By Emil Behnke. 4th and Enlarged ed. 32mo, pp. 31. (8) 1/-

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Whittaker & Co. 2, White Hart St., E.C.
Wright, John & Co. Stone Bridge, Bristol (and Printers)

Sanitary Engineers.

Crapper, T. & Co. 50 to 54, Marlborough Road, S.W.
Doulton & Co. Albert Embankment
Jennings, Geo., 65, Lambeth Palace Road, S.E.
Llewellins & James, Bristol
North British Plumbing Co. 86, Newman St. Oxford St. W.
Patent Gully Co. (Lim.) Nottingham
Reid, A. W. & Co. 69, St. Mary Axe, E.C.

Sanitary Engineering & Ventilation Co. 65, Victoria Street, S.W.
Winser & Co. 52, Buckingham Palace Road, S.W.

Sanitary Surveyors.

Carter, H. C.E. 65, Victoria St. S.W.
Clark J. E. 25, Gt. Ormond St. W.C.
Hallett, Walter & Co., 102, Harrow Road, W.
London & Suburban Sanitary Survey Association, 34, Victoria St.
Pilditch, P. E., 17, Parliament St.
Sanitary Survey Association, 85, Gower Street, W.C.
Sanitary Engineering & Ventilation Co. 65, Victoria Street, S.W.
Tidman, Ed., C.E. 34, Victoria St.

Surgical Instrument and Appliance Manufacturers.

Arnold & Sons, West Smithfield
Bailey W. H. & Son, 38, Oxford St.
Carter A. 47, Holborn Viaduct, E.C.
Carter, John, 6A, New Cavendish Street, W
Cocking, J. T. Plymouth
Coxeter, James & Son, 4 and 6, Grafton Street, W.C.
Dakin Bros.—Offices, 87A, Leadenhall Street, E.C.
"Domen" Belts Co. 61, Moor Lane, E.C.
Down Bros. 5 & 7, St. Thomas St. S.E.
Ernst, Fr. Gustav, 80, Charlotte Street, Fitzroy Square, W.
Evans & Wormull, 31, Stamford St. S.E.
Fannin & Co. Grafton St. Dublin
Ferris & Co. Bristol
Gale, George & Sons, Leeds
Gray, Joseph & Son, Truss Works, Sheffield
Grossmith, W. R. 175, Fleet Street
Hawksley, T. 357, Oxford St. W.
Hills & Co. 46, Newcomen Street, Boro', S.E.
Hooper & Co. 7, Pall Mall, East
Hurst & Co. 6, Fowkes Buildings, Great Tower St., E.C.
Hutchinson, W. & H. Sheffield
Huxley, E. 13, Old Cavendish St. Oxford Street, W.
King, Mendham & Co. Bristol
Krohne & Sesemann, 8, Duke Street, Manchester Square, W.
Lindsey & Sons, 40, Gracechurch St.
Lynch & Co. 192, Aldersgate Street
Matthews Bros. 10, New Oxford St.
Maw, S. Son & Thompson, 7 to 12, Aldersgate Street, E.C.
Mayer & Meltzer, 71, Great Portland Street, W.
Milne, John, Ladywell, S.E.
O'Connor Extension Co., 275 & 276, High Holborn, W.C.
Reynolds & Branson, 13, Briggate, Leeds
Salmon, H. R. 42, Beaumont St. W.
Salmon, Ody & Co. 292, Strand
Schall, K. 55, Wigmore Street, W.
Schramm, K. R. Gt. Castle Street, Cavendish Square, W.
Spratt, W. H. & Brooke, 48, New Bond Street, W.
Statham, H. & Co. Corporation St. Manchester
Stubbs, J. 94, Sheaf St., Station Road, Sheffield
Ward, John, 246, Tottenham Court Road
Weiss, J. & Son, 287, Oxford Street
Winter, R. J. & Co. 55 to 59, Goodge Street, W.
Wright, C. & Co., 108, New Bond Street, W.
Wright, T. G. Denmark St., Bristol

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Association for the supply of pure Vaccine Lymph, 12, Pall Mall, East, S.W.
Dakin Bros., 87A, Leadenhall St.
Faulkner, W. 16, Endell Street, Bloomsbury, W.C.
Ferris & Co. Bristol
Hime, Dr., Bradford, Yorks.
Rebman, F. J. 11, Adam St., Strand
Renner's (Dr.) Establishment, 186, Marylebone Road, N.W.
Somerville, R. & H. 10, Spring Gardens, Edinburgh
Têtu, M. 16, Surrey Square, Old Kent Road, S.E.

Medical and Scientific Newspapers, etc.

American Journal of Science—Monthly, 30/- per annum—Kegan Paul & Co Charing Cross Road, W.C.

Analyst—Monthly 1/—Baillière and Co. King William Street, W.C.

Anatomy and Physiology, Journal of —24/- per annum—Williams & Norgate, Covent Garden

Annals of Surgery—Monthly 2/—Baillière & Co., King William Street, W.C.

Anthropological Journal—Quarterly 5/—Kegan, Paul & Co. Charing Cross Road, W.C.

Asclepiad — Irregular 2/6—Longmans & Co. Paternoster Row

Birmingham Medical Review — Monthly 6d—Hall & English, High Street, Birmingham

Boston Journal of Medicine—Weekly, 30/6 per annum—Kegan Paul & Co. Charing Cross Road, W.C.

Botanical Magazine – Monthly 3/6 —Reeve & Co. 5, Henrietta St. Covent Garden

Botany, Journal of—Monthly 1/3—West, Newman & Co. 54, Hatton Garden

Brain—Quarterly 3/6—Macmillan & Co. Bedford Street, W.C.

Braithwaite's Retrospect — Half Yearly 6/6—Simpkin & Co. Stationers' Hall Court

Bristol Medico-Chirurgical Journal —Quarterly 1/6—J. W. Arrowsmith, Bristol

British and Colonial Druggist —Weekly 3d—42 Bishopsgate Street without, E.C.

British Gynæcological Journal — Quarterly 2/6—John Bale and Sons, Gt. Tichfield Street, W.

British Homœopathic Society, Journal of—Quarterly, 2/6—Bale & Sons, Gt. Titchfield St.

British Medical Journal—Weekly 6d—429, Strand, W.C.

Chemical Industry—Journal of Society of—Monthly—East Harding Street, E.C.

Chemical News—Weekly 4d—Boy Court, Ludgate Hill, E.C.

Chemical Review—Monthly 1/—5, Furnival Street, E.C.

Chemical Society, Journal of the—Monthly, 30/- per annum—Gurney & Jackson, 1, Paternoster Row, E.C.

Chemist and Druggist, the—Weekly 4d, 10/-per annum—42, Cannon Street

Chemists and Druggists, Register of —Annual 5/—17, Bloomsbury Square

Clinical Journal—Weekly 3d—30 and 31, Temple Chambers, E.C.

Dental Association, Journal of British—Monthly 6d—Baillière and Co., King William Street

Dental Record—Monthly 6d—6, Lexington St., Golden Square

Dental Science—British Journal of —1st and 15th 6d—J. P. Segg & Co. 291, Regent Street, W.

Dentist's Register—Annually 3/9—General Medical Council, 299, Oxford Street, W.

Dermatology—British Journal of—Monthly—H. K. Lewis, 136, Gower Street, W.C.

Dublin Journal of Medical Science —Monthly 2/- —Fannin & Co.

Edinburgh Medical Jour. – Monthly 2/- —Oliver & Boyd, Edinburgh

Entomologist, Monthly Magazine—Monthly 6d—23, Paternoster Row, E.C.

Entomologist, Newman's—Monthly 6d—23 Paternoster Row, E.C.

Geological Magazine—Monthly 1/6 —Kegan Paul & Co. Charing Cross Road, W.C.

Geological Society, Journal of—Irregular 5/—14, Henrietta St.

Geologist's Association's Proceedings—Quarterly 1/6—E. Stanford, 27, Cockspur Street

Glasgow Medical Journal—Monthly 2/—A. Macdougall, Mitchell Lane, Glasgow

Guy's Hospital Gazette—Monthly 6d—42, Southwark Street.

Guy's Hospital Reports—Yearly—J. & A. Churchill, New Burlington Street, W.

Health—Weekly 2d—2, Paternoster Square

Homœopathic Review—Monthly 1d—E. Gould & Son, 59, Moorgate Street, E.C.

Homœopathic World—Monthly 6d—12, Warwick Lane

Hospital—Weekly 2d—428, Strand

Hygiene—Monthly 6d—39, Southampton Street, W.C.

Ibis, the—Quarterly 6/- —Gurney & Jackson, 1, Paternoster Row

Index Medicus—Monthly—Kegan Paul & Co. Charing Cross Road, W.C.

International Journal of the Medical Sciences—18/- per annum—Young J. Pentland, 38, West Smithfield

Irish Medical Directory—Annually 6/- —Baillière & Co. 20, King William Street, W.C.

Knowledge—Monthly 6d—326, High Holborn

Lancet—Weekly 7d—423, Strand, W.C.

Laryngology, Rhinology, & Otology, Journal of—Monthly 1/3—11, Adam Street, W.C.

Linnæan Society, Proceedings of—Annually 3/- —Longmans & Co.

Linnæan Society, Transactions—Irregular. Price varies—Society's Apartments, Burlington House

Liverpool Medical Chirurgical Journal — Half-yearly — H. K. Lewis, Gower Street, W.C.

Medical Annual—Annually 7/6—J. Wright & Co. Bristol

Medical Chronicle—Monthly 1/6 — John Heywood, Manchester

Medical Directory—Annually 14/- —J. & A. Churchill, 11, New Burlington Street

Medical Magazine—Monthly 2/6—Southwood, 140, Strand, W.C.

Medical Pioneer — Monthly — 33, Paternoster Row, E.C.

Medical Press & Circular—Weekly 5d—A. A. Tindall, 20, King William Street

Medical Record (New York)—Weekly, 30/- per annum—Kegan Paul & Co. Charing Cross Road, W.C.

Medical Register—Annually 6/- — 299, Oxford Street, W.

Medical Student's Register—Annually 2/6—229, Oxford St. W.

Medical Temperance Journal–Quarterly 6d—33, Paternoster Row

Medical Times & Hospital Gazette—Weekly—11, Adam St., Adelphi

Mental Science, Journal of—Quarterly 3/6—J. and A. Churchill, 11, New Burlington Street

Meteorological Record—Quarterly —E. Stanford, 27, Cockspur St.

Meteorological Society, Journal of —Quarterly 5/- —E. Stanford, 27, Cockspur Street, S.W.

Microscopical Science, Quarterly Journal of—10/- —J. and A. Churchill, New Burlington St.

Microscopy and Natural Science, International Journal of—Quarterly 2/6 — Baillière & Cox, King William Street

Mind—Quarterly 3/- —Williams & Norgate, Henrietta Street, W.C.

Monthly Extract of British Journal of Dental Science—Subscribers only—322, 324, Regent St., W.

Naturalist—Monthly 6d—Henrietta Street, W.C.

Nature—Weekly 6d—Macmillan & Co. Bedford Street

Nervous and Mental Diseases—Quarterly, 18/- per annum—Kegan Paul & Co. Charing Cross Road, W.C.

New Sydenham Society—Irregular — Subscription 21/- —H. K. Lewis, 136, Gower Street

New York Journal of Medicine—Weekly, 30/6 per annum—Kegan Paul & Co., Charing Cross Road, W.C.

New York Medical Journal—Weekly 33, Bedford Street, W.C.

Nursing Directory—Annually — 11, Adam Street, Adelphi.

Nursing Record—Weekly 1d—Record Press (Lim.), 376, Strand, W.C.

Odontological Society, Transactions of—Monthly during Sessions 2/6—Bale and Son, 87, Great Tichfield Street

Ophthalmic Hospital Reports—Half Yearly 5/- —J. & A. Churchill, New Burlington Street

Ophthalmic Review—Monthly 1/- - J. & A. Churchill, New Burlington Street

Ophthalmological Society's Transactions — Yearly — J. and A. Churchill, 11, New Burlington Street, W.

Ophthalmology, Archives of — Quarterly, 20/- per annum—G. P. Putnams Sons, 24, Bedford Street, W.C.

Otology, Archives of — Quarterly, 12/- per annum—G. P. Putnams Sons, 24, Bedford St., W.C.

Pathology & Bacteriology, Journal of—Quarterly—Y. J. Pentland, West Smithfield, E.C.

Pharmaceutical Journal — Weekly 4d—17, Bloomsbury Sq., W.C.

Pharmaceutical Society, Calendar of —Annually 1/- — 17, Bloomsbury Square

Pharmacy, Monthly Magazine of— Monthly 6d—Burgoyne, Burbidges & Co. 16, Coleman St.

Physiology, Journal of—21/- per volume—Ave Maria Lane

Practitioner — Monthly 1/6—Macmillan & Co. Bedford Street

Provincial Medical Journal–Monthly 6d—10, Friar Lane, Leicester

Psychical Research, Proceedings of Society for — Occasionally — Kegan Paul & Co. Charing Cross Road, W.C.

Public Health—Monthly 1/-—E. W. Allen, Ave Maria Lane, E.C.

Quarterly Therapeutic Review—1/- —Baiss Bros. & Co. 4, Jewry St.

Quekett Microscopic Club, Journal of—Half-yearly 2/6—Williams and Norgate, 14, Henrietta St.

Registrar General's Return of Births, Deaths & Marriages—Weekly, Quarterly & Annually — Eyre & Spottiswoode, 9, East Harding Street

Royal College of Surgeons' Calendar —Annually 1/- — Taylor and Francis, Red Lion Court, Fleet Street, E.C.

Royal Microscopical Society, Journal of—Bi-Monthly, 30/- per annum—Williams & Norgate, Henrietta St. Covent Garden

Sanitary Journal—Monthly ; 6/- per annum–Mitchell Lane, Glasgow

Sanitary Record—Weekly 3d ; 10/- per annum—2, Lexham Gardens

Science Gossip — Monthly 4d — Trafalgar Buildings, W.C.

Scientific American—Weekly, per annum 18/- —Kegan Paul & Co. Charing Cross Road, W.C.

Scientific American Supplement—Weekly, 21/- per annum—Kegan Paul & Co. Charing Cross Road, W.C.

Scientific Review—Monthly 6d—Kent & Co. 21, Cockspur St.

Sheffield Medical Journal—Quarterly 2/-—263 Glossop Road, Sheffield

St. Bartholomew's Hospital Reports —Yearly—15, Waterloo Place

St. Thomas's Hospital Reports—Yearly—J. & A. Churchill, New Burlington Street, W.

Universal Medical Journal—F. J. Rebman, 11, Adam St., W.C.

Veterinarian — Monthly 1/6 — 22½, Bartholomew Close, E.C.

Veterinary Journal—Monthly 1/6—Baillière & Co. King William St.

Westminster Hospital Reports—Yearly—J. & A. Churchill, New Burlington Street, W.

Year Book of Pharmacy—Annually 10/—J. & A. Churchill, 11, New Burlington Street, W.

Year Book of Treatment—Annually 7/6—Cassell & Co.

Zoological Record—Annually 30/- —Gurney & Jackson, Paternoster Row

Zoological Society of London, Proceedings—Quarterly 3/- plain ; 12/- coloured—Longmans & Co. Paternoster Row

Zoologist—Monthly 1/- — Simpkin and Co. Paternoster Row

The Medical Annual Note Book.

It is easier to make a note of a thing, than to remember *where* the note was made. The following pages are indexed under their respective headings, and any note can be immediately found when required.

NOTES.

Copy here any formula or fact you wish to keep for reference. These pages are indexed under the words "Notes.")

VIROL: A preparation containing red and yellow Bone Marrow.

NOTES.

MEAT JUICE: A preparation of Raw Beef Juice tasting like Beef Gravy.
(*SHEPPERSON'S*).

NOTES.

MALTO-CARNIS: (*CAFFYN*). Expressed Juice of Raw Beef, with Extract of Malt and Cocoa.

ADDRESSES (PRIVATE).

NURSES.

Note whether Midwifery or Sick Nurse, their terms and private address

BOOKS OR INSTRUMENTS LENT.

DRUGS WANTED.

DRUGS WANTED.

INSTRUMENTS, APPLIANCES OR MATERIALS WANTED.

FOUNDED IN THE YEAR

1823

THE EDINBURGH LIFE

Assurance Company

has had a prosperous career extending over upwards of

SEVENTY YEARS.

During that Period it has issued more than

34,000 Policies Assuring upwards of **£20,000,000**

Paid in Claims - - - - **£5,750,000**

Distributed in Bonuses - - - **£2,000,000**

IT NOW HAS AN

Annual Income of upwards of - **£350,000**

AND HAS BUILT UP AN

Accumulated Fund of £2,800,000.

POLICIES NON-FORFEITABLE AND WORLD-WIDE.

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WITH
Guaranteed Options suitable to Medical Men and others.

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London Office:—11, KING WILLIAM STREET, E.C.

INDEX TO LIFE ASSURANCE OFFICES.

A, *when Established;* B, C, D, *Annual Premiums to Insure £100 on death with Profits, at the age of 30, 40, and 50;* E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices;* P, *Proprietary Offices.*

Those marked with an asterisk (*) in the E column have not sent revised figures for 1894.

Title, &c., of Office.	A	B	C	D	E
					£
Abstainers and General, Life and Accident. *Sec.* R. A. Craig, A.I.A. .. .. .. P	1883	40 11	55 10	82/3	64,037
Alliance, Fire and Life, Bartholomew Lane, E.C. *Sec.*, Robert Lewis .. .. .. P	1824	48 9	64 5	90/9	2,370,398
Atlas, Fire & Life, 92, Cheapside, E.C. *Act.*, George King. *Ass. Sec.*, A. W. Yeo. *Sec.*, S. J. Pipkin. *Further particulars see page* 642 .. P	1808	49 3	63 7	88 8	1,402,988
British Empire, Mutual Life, 4 & 5, King William Street, E.C. *Act.* and *Sec.*, G. H. Ryan M	1847	47/2	63 9	92 3	1,709,725
British Equitable, Life, 1, Queen Street Place, E.C. *Man. Dir. & Act.*, W. S. Gover, F.S.S., F.I.A. P	1854	49 -	66/-	94 3	1,431,303
British Workman's and General, Life and Endowments, Broad Street Corner, Birmingham. *Man.*, H. Port, F.S.A. *Further particulars see page* 641 .. .. P	1866	48 -	64 6	92'3	159,404
Caledonian, Fire and Life, 19, George Street, Edinburgh. *Man.*, D Deuchar. London Office, 82, King William Street, E.C. .. .. P	1805	48 9	64 6	88 6	1,172,007
City of Glasgow, Life, 30, Renfield Street, Glasgow. *Man.*, F. F. Elderton. London Office, 12, King William Street, E.C. *Sec.*, Arthur J. Hemming, F.I.A. .. .. P	1838	48 5	64 6	89 10	1,954,956
Clergy Mutual, Life, Endowments, &c., 2 & 3, Sanctuary, Westminster. *Sec.*, G. H. Hodgson M	1829	46 4	62 2	87 4	3,819,630
Clerical, Medical and General, Life, 15, St. James' Square, and Mansion House Buildings. *Act.*, B. Newbatt .. .. P	1824	48 9	65'-	90/9	3,128,863
Colonial Mutual, Life and Annuity, 33, Poultry. *Man.*, E. W. Browne. *A. Sec.*, B. H. Dames M	1873	44 8	60 9	86 2	1,662,301
Commercial Union, Fire, Life and Marine, 19 & 20, Cornhill, E.C. *Act.*, T. E. Young, B.A. P	1861	49 5	64 2	87 8	1,508,849
Co-operative, Fire, Life and Fidelity, Long Millgate, Manchester. *Man.*, James Odgers .. P	1867	45 10	61 8	87/6	8,549
Eagle, Life, 79, Pall Mall, S.W. *Man.* and *Sec.*, Geo. R. Jellicoe .. .. .. P	1807	50 8	65 5	91 4	2,389,768
Economic, Life, 6, New Bridge Street, Blackfriars. *Act.* and *Sec.*, G. Todd, M.A., F.I.A. M	1823	44 3	59 9	87 6	3,630,218
Edinburgh, Life and Annuities, 22, George Street, Edinburgh. *Man.*, G. M. Low, F.F.A. *Sec.*, A. Hewat, F.F.A., F.I.A. London Office, 11, King William Street, E.C. *Sec.*, Frank Griffith. *Further particulars see page* 636. .. P	1823	47 7	63'2	89/-	2.616,852
English and Scottish Law, Life, Annuity, Endowment, and Loan, 12, Waterloo Place, S.W. *Gen. Man.*, Arthur Jackson .. .. P	1839	48 8	64 6	90 -	1,799,245
Equitable Life Assurance Society, Mansion House Street, E.C. *Act.*, H. W. Manly .. M	1762	53/5	67/11	90,8	4,174,635
Equity and Law, Life, 18, Lincoln's Inn Fields, W.C. *Act.*, A. F. Burridge, F.I.A. .. .. P	1844	48/10	64/6	90'9	2,543,687
Friends' Provident, Life, Annuities, &c., Bradford, Yorkshire. *Act.* and *Sec.*, John Bell Tennant M	1832	45'9	58 1	79 3	2,294,794
General Life, 103, Cannon Street, E.C. *Man.* and *Sec.*, John Robert Freeman. *Further particulars see page* 644 .. .. .. P	1837	49'10	65'4	92 8	1.467,584

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 on death, with Profits, at the age of* 30, 40 *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices*; P, *Proprietary Offices.*

Title, &c., of Office.	A	B	C	D	E
					£
Gresham, Life, St. Mildred's House, E.C. *Sec.* and *Man.*, James H. Scott .. .. P	1848	49/-	65/8	94/3	5,190,594
Guardian, Fire and Life, 6, Princes St., Bank, and 21, Fleet Street. *Sec.*, T. G. C. Browne .. P	1821	48/10	64/6	89/3	2,676,000
Hand-in-Hand, Fire, Life and Annuities, 26, New Bridge Street, Blackfriars, E.C. *Man.*, B. Blenkinsop .. .. M	1696	50/8	68/10	99/3	*2,522,199
Imperial, Life, 1, Old Broad Street, and 22, Pall Mall. *Act.* and *Man.*, J. Chisholm, F.I.A. P	1820	46/11	62/1	87/5	*2,116,498
Lancashire, Life and Fire, Exchange Street, Manchester. *Gen. Man.* Digby Johnson, London Office, 14, King William St., E.C. *Sec.*, John Oliver P	1852	48/6	63/6	90/6	1,099,889
Law Life, 187, Fleet Street. *Man.*, E. H. Holt. *Act.*, A. B. Adlard .. .. .. P	1823	49/4	64/10	91/-	3,813,277
Law Union and Crown, Life, Fire and Annuities, 126 Chancery Lane. *Gen. Man.*, A. Mackay .. P	1825	48/4	£4/-	89/10	*2,926,104
Legal and General Life, 10, Fleet Street, E.C. *Act.* and *Man.*, E. Colquhoun, F.I.A. .. P	1836	50/9	65/11	90/9	2,831,000
Life Association of Scotland, 82, Prince's Street, Edinburgh. *Sec.*, J. Sharp. London Office, 5, Lombard Street. *Sec.*, J. C. Wardrop .. P	1838	50/-	65/4	93/4	3,999,486
Liverpool and London and Globe, Fire, Life and Annuities, 1 Dale Street, Liverpool. *Sec.*, John M. Dove. London Office, 7, Cornhill, E.C. *Sec.*, A. Hendriks, F.I.A. .. .. .. P	1836	49/3	65/6	91/3	4,456,573
London Amicable, Life and Accident, 3, Regent Street, S.W. *Sec.*, Walter Wieland .. P	1887	47 10	63/5	91/4	46,409
London and Lancashire, Life, 66 & 67, Cornhill, E.C. *Man.* & *Act.*, W. P. Clirehugh. *Asst. Sec.*, G. W. Mannering .. .. P	1862	£7 10	£2/4	86/10	873,595
London Assurance Corporation, Fire, Life and Marine, 7, Royal Exchange. *Act.*, A. H. Bailey, F.I.A. .. .. P	1720	49 6	64 11	91/5	*2,006,573
London, Edinburgh and Glasgow, Life, Industrial, and Accidents, Farringdon Street, E.C. *Sec.*, T. V. Cowling .. .. P	1881	48 11	64/7	92/-	*71,331
London Life Association, Lim., 81, King William St., E.C. *Act.* and *Sec.*, C. D. Higham, F.I.A. M	1806	60/4	78 10	108 4	4,194,046
Marine and General Mutual, Life and Marine, 14, Leadenhall Street, E.C. *Act.* and *Sec.*, S. Day, F.I.A. .. .. M	1852	48 10	65 11	91 11	686,896
Metropolitan Life, 13, Moorgate St., E.C. *Act.*, A. Pearson. *Further particulars see page* 644 M	1835	49/9	66/4	92/-	1,983,423
Mutual Life, 39, King Street, Cheapside, E.C. *Act.* and *Man.*, G. Marks, F.I.A. *Sec.*, H. G. Rowsell .. .. M	1834	48/10	£6 8	97/11	1,268,391
National Assurance of Ireland, Fire, Life, and Annuities, 3, College Green, Dublin. *Act.* and *Sec.*, Harold Engelbach, London Office, 33, Nicholas Lane, E.C. *Res. Sec.*, Charles Smith .. P	1822	48 7	64 3	91 7	*271,573
National Guardian, Life and Loans, 21, New Oxford Street, W.C. *Sec.*, Thomas J. Bourne .. P	1865	48 6	64 8	86/8	*9,435
National Life, 2, King William Street, City. *Act.* and *Sec.*, A. W. Sunderland. *Asst. Sec.*, H. J. Lockwood .. .. M	1830	50/4	65 9	92 8	859,820
National Provident, 48, Gracechurch Street, E.C. *Act.* and *Sec.*, Arthur Smither .. .. M	1835	50/2	66/3	91/1	*4,673,865
North British & Mercantile, Fire, Life & Annuities, 61, Threadneedle Street, E.C., and 64, Princess Street, Edinburgh. *Life Man.* and *Act.*, London, H. Cockburn, *Sec.*, F. W. Lance. *Further particulars see page* 643 .. .. .. P	1809	49 10	66 1	91 11	8,023,084
Northern Assurance, 1, Moorgate St., E.C. *Sec.*, H. E. Wilson .. .. P	1836	48 8	£4 10	92/4	2,766,240

A, *when Established:* B, C, D, *Annual Premiums to Insure £100 on death, with Profits, at the age of* 30, 40 *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices;* P, *Proprietary Offices.*

Title, &c., of Office.	A	B	C	D	E
					£
Norwich Union, Life, Norwich. *Sec*, J. J. W. Deuchar. London Office, 50, Fleet Street, E.C.	1808	45 8	59 6	85 3	2,064,715
Patriotic Life and Fire, 9, College Green, Dublin. *Man.*, B. H. O'Reilly. *Act.*, Samuel Hunter. London Office, 19, King William St., E.C. *Man.*, Chas. E. Strong .. .. .. P	1824	48/8	64 5	90/4	138,569
Pearl, Life, London Bridge, City, E.C. *Man.*, P. J. Foley, M.P. .. .. P	1864	50/-	67 5	96 6	*351,732
Pelican, Life, 70, Lombard Street, and 57, Charing Cross. *Sec.*, R. C. Tucker, F.I.A. .. .. P	1797	48 11	64 9	91 7	1,105,315
Positive Government Security, Life, 25, Abchurch Lane, E.C. *Man.* & *Act.*, A. G. Mackenzie, F.I.A., F.F.A. .. .. P	1870	47/1	64 7	94 3	481,488
Post Office, Life & Annuities, St. Martin's le Grand, *Act.*, A. Finlaison .. .. .. P	1865	46/-	61/6	87 6	—
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THE Clinical practice of this Hospital comprises a service of 744 Beds, of which 222 are allotted to the Medical Cases, 380 to the Surgical Cases, 26 to Diseases of the Eye, 24 to Diseases of Women, and 22 to the Syphilitic; while 70 are for Convalescent Patients at Swanley, Kent. The Hospital receives within its Wards nearly 7000 Patients annually, whilst the Out-Patients amount to more than 156,000.

PUPILS' APPOINTMENTS.

Eight House-Physicians, each holding office for one year, are appointed by the Physicians. Each House-Physician is provided with rooms by the Hospital authorities. Ten House-Surgeons each holding office for one year, are appointed by the Surgeons. Each House-Surgeon is provided with rooms by the Hospital authorities.

The Midwifery-Assistant holds office for six months, and is appointed by the Physician-Accoucheur. He is provided with rooms by the Hospital authorities.

The Ophthalmic House-Surgeon is appointed every six months by the Ophthalmic Surgeons. All the above officers receive a salary of £25.

Two Resident Assistant Chloroformists are appointed annually; the Senior receiving £75 and the Junior £50. Two Assistant Electricians, with a salary of £25, are appointed every three months.

The In-Patient Dressers, the Clinical Clerks, the Obstetric Clerks, the Clerks to the Out-Patients, the Dressers to the Out-Patients, and the Clerks and Dressers in the Special Departments are chosen from the diligent Students. No fee is paid for any of these appointments.

MEDICAL AND SURGICAL STAFF.

Physicians—Dr. Church, Dr. Gee, Sir Dyce Duckworth, Dr. Hensley.
Assistant-Physicians—Dr. Brunton, F.R.S., Dr. Norman Moore, Dr. S. West, Dr. Ormerod.
Consulting Surgeons—Sir J. Paget, Bart. D.C.L., F.R.S., Luther Holden, Esq., Sir Wm. Savory, F.R.S.
Surgeons—Mr. T. Smith, Mr. Willett, Mr Langton, Mr. Marsh, Mr. Butlin.
Assistant Surgeons—Mr. Walsham, Mr. Cripps, Mr. Bruce Clarke, Mr. Bowlby, Mr. Lockwood.
Physician-Accoucheur—Dr. Champneys.
Assistant Physician-Accoucheur—Dr. Griffith.
Ophthalmic Surgeons—Mr. Vernon, Mr. Jessop.

THE COLLEGE.

Students attending the Practice of the Hospital, or the Lectures in the Medical School, are admitted to residence in the College within the Hospital walls, subject to the College Regulations.

LECTURES.

Medicine—Sir Dyce Duckworth, Dr. Moore.
Surgery—Mr. Willett, Mr. Marsh.
Descriptive and Surgical Anatomy—Mr. Walsham, Mr. Bruce Clark.
General Anatomy and Physiology, with Histology—Dr. Klein, F.R.S.
Chemistry and Practical Chemistry—Dr. Russell, F.R.S.
Midwifery—Dr. Champneys.
Physics—Mr. F. Womack.
Materia Medica—Dr. Brunton, F.R.S.
Botany—Rev. George Henslow.
Forensic Medicine—Dr. Hensley.
Hygiene—Dr. Thorne.
Biology and Comparative Anatomy—Dr. Shore.
Pathological Anatomy—Dr. Kanthack.
Ophthalmic Surgery—Mr. Vernon.
Psychological Medicine—Dr. Claye Shaw.

CLINICAL LECTURES

Are given during the Winter and Summer Session.
Clinical Medicine—Dr. Church, Dr. Gee, Sir Dyce Duckworth, Dr. Hensley.
Clinical Surgery—Mr. T. Smith, Mr. Willett, Mr. Langton, Mr. Marsh, Mr. Butlin.
Midwifery and Diseases of Women—Dr. Champneys.

SPECIAL DEPARTMENTS.

Diseases of the Skin—Dr. S. West.
Orthopædic Surgery—Mr. Walsham.
Diseases of the Ear—Mr. Cumberbatch.
Diseases of the Eye—Mr. Vernon, Mr. Jessop.
Practical Surgery—Mr. Bowlby, Mr. Power.
Practical Anatomy—Mr. Waring, Mr. Bailey,
Assistant Demonstrators—Mr. Eccles, Mr. Paton, Dr. Hayward, Mr. Weir.
Medical Registrar—Dr. Herringham.
Practical Physiology—Dr. Edkins.
Assistant Demonstrators—Dr. Fletcher, Dr. Bowman.
Operative Surgery—Mr. Power, Mr. Berry, Mr. Waring.
Practical Medicine—Dr. West, Dr. Calvert, Dr. Andrews.
Practical Midwifery—Dr. Roberts.
Surgical Registrar—Mr. Berry.

SCHOLARSHIPS AND PRIZES.—Open Scholarships in Science (founded 1873). These Scholarships, four in number, of the value of £150, £75, £75, £50, are tenable for one year. Candidates must not be more than twenty-five years of age for those of £75, and not more than twenty years of age for the others, and must not have entered to the medical or surgical practice of any London medical school. The subjects of examination are Physics, Chemistry, for one of £75; Biology and Physiology for the other of £75; and for the Junior, Physics, Chemistry, and Biology.—Preliminary Scientific Exhibition (founded 1873). The subjects of examination are identical with those of the Open Scholarship in Science. This Exhibition, of the value of £50, is tenable for one year.—The Jeaffreson Exhibition, of the value of £20, is an open exhibition in Classics, Mathematics, and Modern Languages.—A Shuter Scholarship, £50, in Anatomy, Physiology, and Materia Medica, at entrance (limited to graduates in arts of Cambridge).—A Senior Scholarship, £50, in Anatomy, Physiology, and Chemistry.—Lawrence Scholarship and Gold Medal, of the value of 40 guineas (founded 1873 by the family of the late Sir William Lawrence).—Two Brackenbury Scholarships, each 30 guineas, in Medicine and Surgery.—Four Junior Scholarships in the subjects of study of the first year; 1. £30; 2. £20; 3. £25; 4. £15.—The Wix Prize is awarded for the best essay on the following subject: "The Life and Works of Trousseau."—The Bentley Prize for the best report of cases occurring in the wards of the hospital during the previous year.—The Kirkes Gold Medal and Scholarship of 30 guineas for Clinical Medicine.—The Hichens Prize for the best examination in "Butler's Analogy."—Foster Prize for the best examination in Practical Anatomy (senior).—The Treasurer's Prize for the best examination in Practical Anatomy (junior).—The Harvey Prize for the best examination in Practical Physiology.

Special Classes are held for the Preliminary Scientific, and for other Examinations at the University of London. Students preparing for other Examining Boards are arranged in classes and examined by the Lecturers, Demonstrators, and Assistant Demonstrators.

Fee for Lectures and Hospital Practice, 150 guineas if paid in one sum, or 160 guineas if paid by Instalments.

Payment in either of these ways entitles a Student to a Perpetual ticket.

Communications to be addressed Dr. T. W. Shore, Warden of the College, St. Bartholomew's Hosp.

ST. THOMAS'S HOSPITAL,

ALBERT EMBANKMENT, WESTMINSTER BRIDGE, S.E.

Consulting Staff.

Physicians—Dr. Bristowe, Dr. Harley.
Obstetric Physician—Dr. H. Gervis.
Surgeons—Sir John Simon, K.C.B., Mr. Sydney Jones, Mr. Croft, Sir William Mac Cormac.
Ophthalmic Surgeon—Mr. Liebreich.

Visiting Staff.

Physicians—Dr. Otd, Dr. J. F. Payne, Dr. Seymour J. Sharkey, Dr. T. D. Acland.
Assistant Physicians—Dr. H. P. Hawkins, Dr. H. W. G. Mackenzie, Dr. H. G. Turney.
Surgeons—Mr. A. O. MacKellar, Mr. H. H. Clutton—Mr. W. Anderson, Mr. R. Pitts.
Assistant Surgeons—Mr. G. H. Makins, Mr. W. H. Battle, Mr. C. A. Ballance, Mr. H. B. Robinson.

Special Departments.

Obstetric Department: Physician—Dr. C. J. Cullingworth.
Assistant Physician—Dr. R. Cory.
Eye Department: Surgeons—Mr. E. Nettleship, Mr. J. B. Lawford.
Throat Department: Physician—Dr. E. Semon.
Skin Department: Surgeon—Mr. William Anderson.
Ear Department: Surgeon—Mr. C. A. Ballance.
Electrical Department: Physician—Dr. H. G. Turney.
Dental Department: Surgeon—Mr. C. E. Truman.

Medical Officers.

Resident Assistant Physician—Dr. S. G. Teller.
Resident Assistant Surgeon—Mr. T. C. Abbott.
Anæsthetists—Mr. Tyrrell Mr. White.
Dental Department—Mr. Morris.
Pharmaceutist—Mr. Edmund White.
Medical Registrar—Dr. C. R. Box.
Surgical Registrar—Mr. C. S. Wallace.
Obstetric Registrar—Dr. W. W. H. Tate.

Lecturers.

Medicine—Dr. Payne, Dr. Sharkey.
Clinical Medicine—Dr. Ord, Dr. Payne, Dr. Sharkey, Dr. Acland.
Surgery—Mr. Clutton, Mr. Pitts.
Clinical Surgery—Sir William Mac Cormac, Mr. MacKellar, Mr. Clutton, Mr. Anderson, Mr. Pitts.
Practical Surgery—Mr. MacKellar, Mr. Ballance.
Descriptive Anatomy—Mr. Anderson, Mr. Makins.
General Anatomy and Physiology—Dr. Sherrington.
Practical Physiology and Histology—Dr. Sherrington.
Elementary Biology—Mr. Parsons.
Diseases of the Eye—Mr. Lawford.
Diseases of the Throat—Dr. Semon.
Chemistry, Chemical Physics, and Practical Chemistry—Mr. Wyndham R. Dunstan.
Midwifery and Diseases of Women and Infants—Dr. Cullingworth.
Pharmacology & Therapeutics—Dr. Mackenzie.
Forensic Medicine and Toxicology—Dr. Cory, Mr. MacKellar.
Pathological Anatomy—Dr. Hawkins.
Surgical Pathology and Bacteriology—Mr. Shattock.
Botany—Mr. Bennett.
Comparative Anatomy & Zoology—Mr. Parsons.
Mental Diseases—Dr. Rayner.
Public Health—Dr. Edward Seaton.
Elementary Clinical Medicine—Dr. Mackenzie, Dr. Turney.

Scholarships, Prizes, and Appointments.

Two Open Entrance Science Scholarships, of £150, and £60, are awarded in October to First Year's Students after an Examination in Chemistry, Physics, and Botany, Zoology, or Physiology.

One Open Entrance Scholarship in Anatomy, Physiology, and Chemistry, of the value of £50, for Third Year's Students.

FIRST YEAR'S PRIZES.—Winter: The William Tite Scholarship, £57 10s.; College Prizes, £20 and £10. Summer: College Prizes, £15 and £10.

SECOND YEAR'S PRIZES.—Winter: The Musgrove Scholarship, £38 18s., tenable for two years; College Prizes, £20 and £10. Summer: College Prizes, £15 and £10.

THIRD YEAR'S PRIZES.—Winter: The Peacock Scholarship, £38 10s.; College Prizes, £20, £15, and £10. Summer: College Prizes, £15 and £10.

The Cheselden Medal, annually, for Surgery and Surgical Anatomy.
The Mead Medal, annually, for Medicine, Pathology, and Hygiene.
The Grainger Testimonial Prize, annually, for an Anatomical and Physiological Essay.
The Solly Medal and Prize, biennially, for Surgical Reports.
The Beaney Scholarship, biennially, for Surgery and Surgical Pathology.
The Bristowe Medal, annually, for Pathology.
The Treasurer's Gold Medal, annually, for General Proficiency and Good Conduct.
The Salters' Company Research Fellowship of the annual value of £100, tenable for three years.

Four House Physicians, four House Surgeons, two Assistant House Surgeons, a Senior and Junior Obstetric House Physician, are selected every three months from Students holding qualifications; two Ophthalmic House Surgeons, one with a salary of £50, and the other provided with Commons, are also appointed. Clinical Assistants in the Special Departments for Diseases of the Skin, Throat and Ear.

Clinical Clerks and Dressers to Out and In Patients. All these appointments are free.

Two Registrars at a Salary of £100 each are chosen from Senior Students.

An Obstetric Tutor and Registrar at a Salary of £50.

A Resident Assistant Physician and a Resident Assistant Surgeon at a Salary of £100 per annum, each, are appointed from time to time.

Assistants to the Teachers of Practical Surgery, to the Demonstrators of Morbid Anatomy, and in the Physiological Laboratory, Prosectors, and Obstetric Clerks are also appointed.

The Winter Session commences on October 1st, and the Summer on May 1st. Students may enter at either Session.

The Fees may be paid in one sum or by instalments. Special Entries may be made to Lectures and Practice. Students can enter in the second or subsequent years at a reduced fee. Dental Students are admitted. Qualified Practitioners can obtain perpetual tickets on payment of a small fee.

Special Classes are held for the Preliminary Scientific and Intermediate M.B. Examinations of the University of London.

G. H. MAKINS, *Dean.*

Any further information may be obtained from Mr. RENDLE, *Medical Secretary.*

University of Durham.

COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

DEGREES IN MEDICINE, SURGERY, AND HYGIENE.—Six Degrees are conferred by the University of Durham—viz., the Degrees of Bachelor in Medicine, Doctor in Medicine, Bachelor in Surgery, and Master in Surgery, Bachelor in Hygiene, and Doctor in Hygiene; and Diploma in Public Health.

Attendance at the University of Durham College of Medicine during one of the five years of professional study, or subsequently to qualification elsewhere, is required as part of the curriculum for the Degrees, except in the case of Practitioners of more than fifteen years' standing, who have attained the age of forty years, who can obtain the Degree after examination only.

The first two Examinations for the Degree of M.B. may be passed prior to the commencement of attendance at Newcastle.

A Candidate who has a recognized qualification, or who has passed the First Examination of the Conjoint Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England, will be exempt from the First Examination of the University of Durham, except in the subjects of Chemistry with Chemical Physics.

A candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England, and will be entitled to present himself for the Final Examination of the Board on the completion of the necessary curriculum.

The Extra Arts Examination must be passed previously to the candidate's entry for his Final Examination for the Degree.

All information, together with Examination Papers &c., is given in the Calendar of the University of Durham College of Medicine, Newcastle-upon-Tyne, or may be obtained from the Secretary at the College.

Scholarships, &c.—A University of Durham Scholarship, value £100, for proficiency in Arts awarded annually to full Students in their first year only. The Dickinson Scholarship—value £15 and a Gold Medal—for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship—value, the interest of £300—for Anatomy, Physiology, and Chemistry. The Charlton Scholarship—value, the interest of £700—for Medicine. The Gibb Scholarship—value the interest of £100—for Pathology. The Luke Armstrong Scholarship—interest on £600—awarded to the Candidate who obtains highest marks in the honours division in the final examination in April and September in each year. The Stephen Scott Scholarship—interest on £1000—for promoting the study of Hernia and allied subjects. Heath Scholarship—The late George Yeoman Heath, M.D., M.R., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, has bequeathed the sum of £1000 to found a Scholarship in Surgery, the interest to be awarded every second year. The Goyder Memorial Scholarship at the Infirmary—value, the interest of £225—for Clinical Medicine and Clinical Surgery. At the end of each Session a Prize of Books and Honours Certificates are awarded in each of the regular Classes. An Assistant Curator of the Museum, Assistant Demonstrators of Anatomy, Prosectors, and Assistant Physiologists are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Clinical Clerks, and Dressers are appointed every three months.

The Royal Infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in relation to Pathological Demonstrations are given as opportunity offers by the Pathologist. Practical Midwifery can be studied at the Newcastle Lying-in-Hospital, where there is an Out-door Practice of about 500 cases annually.

FEES.

(*a*) A Composition Ticket for Lectures at the College may be obtained—

I. By payment of 70 guineas on entrance.

II. By payment of 45 guineas at the commencement of the First year, and 35 guineas at the commencement of the Second year.

III. By three annual instalments of 35, 30, and 20 guineas respectively, at the commencement of the Sessional year.

(*b*) Fees for attendance on Hospital Practice:—

For three months' Medical and Surgical Practice, 5 guineas.

" one year's " " 12 "

" perpetual " " 25 "

Or by three instalments at the commencement of the Sessional year—viz., First year, 12 guineas; Second year, 10 guineas; Third year, 6 guineas. Or by two instalments—viz., First year, 14 guineas; Second year, 12 guineas.

In addition to the above fees, the Committee of the Royal Infirmary require the payment of 2 guineas yearly up to three years from every Student attending the Infirmary for a year or part of a year; After three years of attendance, such payment will be no longer necessary.

(*c*) Single Courses of Lecture, 5 guineas.

Fees for Lectures, &c., at the College must be paid to the Registrar, and Fees for Hospital Practice to the House-Physician at the time of entry.

Further particulars may be obtained from the Secretary,

HENRY FOX, B.N., at the College.

UNIVERSITY OF EDINBURGH.

FACULTY OF MEDICINE.—WINTER SESSION.

The Winter Session begins in October.

Materia Medica	Prof. Fraser, M.D.
Chemistry	Prof. Crum Brown, M.D.
Surgery	Prof. Chiene, M.D.
Physiology	Prof. Rutherford, M.D.
Midwifery & Diseases of Women and Children	Prof. Simpson, M.D.
Clinical Surgery (Tu. & Fr.) ..	Prof. Annandale, M.D.
Clinical Medicine (Mon. & Th.) ..	Profs. Sir Thomas Grainger Stewart, Fraser, and Greenfield; and Simpson on Diseases of Women.
Anatomy	Prof. Sir William Turner, M.B.
Medicine	Prof. Sir Thomas Grainger Stewart, M.D.
Pathology	Prof. Greenfield, M.D.
Botany	Prof. Balfour, M.D.
Zoology	Prof. Ewart, M.D.
Physics	C. G. Knott, D.Sc.

LECTURERS.—Diseases of Children, James Carmichael, M.D., and John Playfair, M.D.; Regional Anatomy, David Hepburn, M.D.; Advanced Practical Physiology, E. W. Wace Carlier, M.D., B.Sc.; Pathological Bacteriology, Robert Muir, M.D.

SUMMER SESSION.

The Summer Session begins on 1st May.

Botany, Prof. Balfour.—Forensic Medicine, Prof. Sir Douglas Maclagan.—Clinical Medicine, Profs. Sir Thomas Grainger Stewart, Fraser, and Greenfield; and Prof. Simpson on Diseases of Women.—Clinical Surgery, Prof. Annandale.—Organic Chemistry, Prof. Crum Brown.—Zoology, Prof. Ewart.—Physics, Prof. Tait.—Mental Diseases, T. S. Clouston, M.D.—Diseases of the Eye, D. Argyll Robertson, M.D.—Diseases of Children, Jas. Carmichael, M.D., and J. Playfair, M.D.—Regional Anatomy, David Hepburn, M.D.—Experimental Pharmacology, Joseph Tillie, M.D.

The annual value of the Fellowships, Scholarships, Bursaries and Prizes in the Faculty of Medicine amounts to about £3,750; that of others which may be held by Students of Medicine amounts to about £1,250.

Practical Instruction is afforded in Laboratories, furnished with all the necessary appliances, and in Tutorial and Practical Classes in connection with the above chairs under the superintendence of the Professors.

A copy of the Regulations for Graduation in Medicine and Surgery may be had on application to the Clerk of the University, or to the Dean of the Faculty of Medicine. JOHN KIRKPATRICK, *Secretary of Senatus.*

UNIVERSITY OF EDINBURGH, *December*, 1894.

Royal College of Surgeons of Edinburgh.

FOUNDED 1505.

Copies of the Regulations for the Fellowship, Licence, and Licence in Dental Surgery, with dates of Examinations, Curricula, etc., for the year 1894-5, are now ready, and may be had on application to

JAMES ROBERTSON, Solicitor, 1, GEORGE SQUARE, EDINBURGH,
Clerk to the College.

University College, BRISTOL.

FACULTY OF MEDICINE.

WINTER SESSION, MONDAY, October 1st, 1894. SUMMER SESSION, WEDNESDAY, May 1st, 1895.

Courses of Lectures:

Medicine—Profs. E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., F.R.C.P., and R. SHINGLETON SMITH, M.D. Lond., B.Sc., F.R.C.P.
Surgery—Prof. J. GREIG SMITH, M.A., M.B., C.M.
Anatomy—Prof. EDWARD FAWCETT, M.B., C.M. Edin.
Practical Anatomy—Demonstrators, J. P. BUSH, M.R.C.S., and C. A. MORTON, F.R.C.S.
Physiology—Prof. G. MUNRO SMITH, M.R.C.S.
Chemistry—Lecturer, T. COOMBER, F.C.S.
Public Health—Lecturer, D. S. DAVIES, M.D. Lond., D.P.H. Cantab.
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Extensive arrangements are made in this Asylum for the reception of Private Patients of both sexes.

Terms from 25/- per Week.

Further particulars can be obtained upon application to the RESIDENT PHYSICIAN.

ST. JOHN'S HOSPITAL
FOR
DISEASES OF THE SKIN,
LEICESTER SQUARE, W.C.

President = THE EARL OF CHESTERFIELD.

There are 29 Beds for In-Patients.

The Out-Patient Practice may be attended free by Medical Practitioners every day (except Friday) from 1.30 to 4 p.m., also on Thursdays from 10.30 to 12.30.

Lectures, followed by Clinical Demonstrations on cases presenting themselves in the Out-Patient Department, are given twice a week.

There are Three Courses in the year, and the Fee for a Course is £1 1s.

ST. VINCENT MERCIER, Secretary.

HOSPITAL FOR
Consumption and Diseases of the Chest,
BROMPTON.

PUPILS are admitted to the practice of the Wards and the Out-Patient Department of the Hospital, on payment of a Fee of One Guinea for one month; Five Guineas for six months; Ten Guineas, Perpetual. Lectures and Demonstrations are given by Members of the Medical Staff on Wednesdays and Fridays at 4 p.m. Certificates of attendance on the Practice of the Hospital are recognised by the University of London, the Apothecaries' Society, and by the Army, Navy, and Indian Board.

WILLIAM H. THEOBALD, Sec.

UNIVERSITY OF ABERDEEN.
FOUNDED 1494.

FACULTY OF MEDICINE.

THE Degrees in Medicine granted by the University are—Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, and Master of Surgery. They are conferred only after Examination, and only on Students of the University. A Diploma in Public Health is conferred after Examination on Graduates in Medicine of any University of the United Kingdom.

The Faculty of Medicine embraces twelve chairs, from which instruction is given in all the main branches of Medical Science.

Practical Classes in connection with these chairs are conducted by the Professors and Assistants in Laboratories furnished with all the necessary appliances; and opportunities are afforded to Students and Graduates to extend their practical knowledge and engage in original research.

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Bursaries, Scholarships, and Fellowships, to the number of 46, and of the annual value of £1081, may be held by Students in this Faculty.

The cost of Matriculation, Class and Hospital Fees for the whole curriculum, exclusive of the fees for the Degrees is usually about £40.

A prospectus of the classes, fees, &c., together with the regulations for Graduation in Medicine and Surgery, may be had on application to the Secretary of the Faculty of Medicine.

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LONDON HOMŒOPATHIC HOSPITAL

GREAT ORMOND STREET, BLOOMSBURY, W.C.

A GENERAL HOSPITAL FOR MEN, WOMEN & CHILDREN,

INCLUDING SPECIAL DEPARTMENTS FOR

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Consulting Physician for Diseases of Women—Dr. G. M. Cattrae.
Consulting Surgeon—Dr. Yeldham.
Physicians—Dr. Galley Blackley, Dr. John H. Clarke, Dr. Byres Moir.
Assist. Physicians—Dr. Washington Epps, Dr. Marsh, Dr. Roberson Day, Dr. Cavendish Molson.
Surgeon—Mr. Knox Shaw.
Assistant Surgeon and Surgeon for Diseases of the Throat—Mr. Dudley Wright.
Ophthalmic Surgeon—Mr. Knox Shaw.
Physician for Diseases of Women—Dr. G. H. Burford
Assistant Physician for Diseases of Women—Dr. Edwin A. Neatby.
Physician for Diseases of the Skin—Dr. Galley Blackley.
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Practical Instruction in *Homœopathic Therapeutics* is given daily, in the Wards, and the Out Patient Department.

The instruction at this Hospital is specially intended for:—

1. Medical Men who are already qualified and who desire to obtain a knowledge of Homœopathy in addition to their other acquirements.
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Preparation through the Post for all the Medical Examinations of the

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Superior Hospital-trained Nurses for Monthly, Medical, Surgical, Mental, Fever, and Small-pox Cases, also Male Attendants, Male Nurses, and Medical Rubbers, can be obtained immediately on application to the Superintendent.

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Invalids can be received under the care of their own Physicians, each Patient being provided with a separate room.

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PRIVATE ESTABLISHMENT at the Seaside for Lady Patients suffering from Hysteria and Nervous Affections.

The Home is pleasantly situated in this well-known health resort. Patients will find every comfort. Massage, Baths, and Electrical treatment by the Proprietress of many years' experience. Highest references.

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Masseuses are also supplied at 7s. 6d. per visit.

TRAVELLING EXPENSES, AND 2s. 6d. PER WEEK FOR WASHING, TO BE PAID TO THE NURSE.

44

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Society for Training Teachers of the Deaf, and Diffusion of the "German" System.

FOUNDED 1876. *INCORPORATED 1886.*

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The "German" or Pure Oral System teaches spoken and written language to the Deaf and "Dumb." It dispenses entirely with signs and the finger alphabet, and with the necessity in after-life of using pencil and tablets. Lip-reading taught to persons becoming deaf in adult life.

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The Home stands in grounds of 4 acres, 450 feet above the sea level, 10 miles north-west of the Marble Arch. A large day-room and dormitories for 22 persons (Women and Children) of the working classes, and separate bedrooms, with a drawing-room and a dining-room, for the upper classes, at higher charges.

The Omnibus of the Home fetches the Convalescents from their homes or hospitals.

Rules and Terms of Admission may be obtained from the *Honorary Secretary*,

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IT is with much regret that the Proprietors of

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SAMPLE BOTTLE POST FREE TO ANY MEDICAL MAN IN THE UNITED KINGDOM.

PRICE 3/6 PER BOTTLE.

Medical Profession, 32s. per dozen, carriage paid.

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STRETTON HOUSE, CHURCH STRETTON, SHROPSHIRE.

ESTABLISHED 1853.

This Institution is exclusively for the reception of Gentlemen of the Upper and Middle Classes. Its popularity and success must be attributed in a great measure to the open manner in which it is conducted; instead of being a place to be avoided, as asylums were in times past, it is the resort of the better class families for recreation and amusement, and we are of opinion that the proprietor has taken a step in the right direction, and one that will still further command the confidence of the public, by providing accommodation for the friends of patients, who will thus have an opportunity of satisfying themselves as to the mode of treatment and the comforts afforded. The charges are moderate, according to the requirements of the patients.—FROM THE "MEDICAL PRESS."

Church Stretton is situated in the Highlands of Shropshire (600 ft. above sea level), amidst the most charming mountain scenery, and has a very invigorating and bracing atmosphere. One great object of this institution is to find healthy and congenial occupation for its patients, and thus assist the medical treatment. Every inducement is held out for patients to interest themselves, either on the large farm attached to the house, and which supplies direct both beef, mutton, and agricultural produce; or in the workshops, in gardening, &c. There are numerous tennis courts and a private cricket ground; also a capital golf links; carriage exercise is provided for those who desire it, and walks of several miles in length can be had in the grounds and on the hills without going on the public road. One result of these facilities is that just 50 per cent. of the patients are on parole (having very considerable liberty) or have fixed occupations to interest themselves in daily, and thus the almost unavoidable feeling of restraint is very largely decreased.

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Attendants Supplied on Shortest Notice.

Telegrams—"CAMPBELL-HYSLOP, CHURCH STRETTON."

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A HOME for a limited number of Ladies and Gentlemen of the Upper Classes afflicted with *Nervous and Mental Diseases.*

The Estate is healthily situated on the high ground, 2 miles from St. Heliers, commanding extensive views over St. Aubin's Bay with its islet Forts, and the towns of St. Heliers and St. Aubin's with their shipping, and comprises 11 acres of Ornamental Grounds of great beauty, besides Gardens and Farm land, and a Mansion of handsome proportions.

The Non-Restraint system in its fullest sense is followed, and methods savouring of "Institutionism" are carefully excluded, the object being to secure for Patients *the Comforts and Privacy of Home.*

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The Grove (owing to its Southern aspect and protection from the North and East, together with the natural mildness of the Jersey climate) is especially suited to those whose constitutions are delicate or temporarily reduced through Alcohol, Drugs, Hysteria, or Nervous and Mental Diseases, whilst from its lofty situation the air is *bracing and invigorating.*

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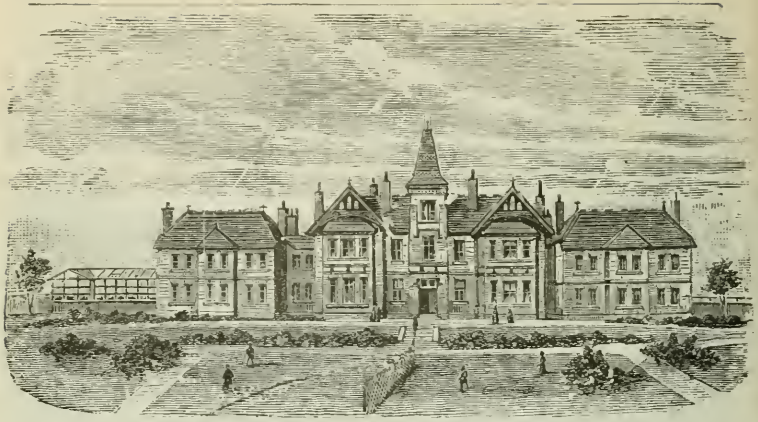
There are Associated and private rooms, or *self-contained suites of 2, 3, or 4 rooms.*

Voluntary Boarders and Friends of Patients can be accommodated. Special arrangements can be made for Ladies and Gentlemen wishing to have their own servants or private horses and carriages with them.

For Terms and particulars (descriptive, legal, means of access, &c.), apply to—

Dr. F. NEEL GAUDIN, Resident Medical Proprietor.

Telegraphic Address:—"GROVE, JERSEY."



SHAFTESBURY HOUSE,

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Private Asylum Licensed for the Treatment of Ladies and Gentlemen mentally afflicted.

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The Rooms throughout the building are large, airy, cheerful, light, very brightly furnished, and, as the walls are tinted in various colours, there is a complete absence of anything approaching to dulness or gloom.

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Private Rooms.—Private Rooms and special attendants provided whenever required.

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Train Service.—Formby Station is about ten minutes' walk distant. Trains run to and from Formby nearly every half hour to Southport, as also to the Exchange Station, Liverpool, and there is now direct communication with the North, and with London, and the South of England by means of the London and North-Western Railway.

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Resident Physician.

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ASYLUM for IDIOTS,

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Under the Patronage of Her Most Gracious Majesty the Queen.

This National Institution has accommodation for 700 Patients, and all that Science and kindness can suggest is brought into requisition for the comfort and Improvement of the Inmates.

Provision is made for Payment Patients, commencing at 60 guineas a year, including Clothing; or higher rates, according to the requirements of the case, and they have all the comforts of a *Private Home*, as well as instruction and amusement. Proposals for admission to be addressed to the Secretary, who will supply the Forms and all information on application.

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An Annual Subscriber has One Vote at each Election for each Half-Guinea contributed, and a Life Subscriber has One Vote at each Election during Life for each Five Guineas contributed.

H. GERARD HOARE, ESQ., TREASURER.
JAMES DOWNING, SECRETARY.

OFFICES:
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THIS PRIVATE ASYLUM, which was founded by the late W. H. O. SANKEY, M.D., F.R.C.P., for the reception of a limited number of ladies and gentlemen mentally afflicted, is now conducted on the same lines by his son, E. H. O. SANKEY, M.A., M.B., B.C. Cantab.

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The Mansion stands high, among handsomely laid out gardens in the midst of a picturesque deer park (about 70 head of deer are kept), and commands a magnificent view of Welsh mountain scenery.

Carriages, horses, lawn-tennis, golf, trout and other fishing are provided.

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BURGESS HILL, SUSSEX.

This Private Asylum is under the management of a community of Augustinian Nuns. It receives Catholic Patients of both sexes, the ladies being under the immediate care of the Sisters. A Chaplain and a Medical Man reside in the house, and the Patients are also visited regularly by a physician of special experience. The establishment is supplied with every requisite for the treatment and well-being of the Patients; and the grounds (of 250 acres) in which it stands afford ample space for their recreation and exercise. It is within two miles of Burgess Hill Station, on the London and Brighton Railway, and is easily accessible from all parts of the Kingdom.

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Private Asylum for Mental & Nervous Invalids of the Upper and Middle Classes.

A LIMITED NUMBER ONLY RECEIVED.

THE COMMISSIONERS IN LUNACY SAY:

"The House presents its usual aspect of cheerfulness and comfort. . . The arrangements differ very slightly from those of a private house, and there is no doubt that the less of such difference there is the better it is for the patients."

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ABBEY GREEN, JEDBURGH.

Established 1871. Enlarged 1894.

Dr. BLAIR receives into his House a limited number of Patients suffering from Mental and Nervous Disorders.

Dry Climate. Beautiful District. Moderate Terms.

THE LAWN, LINCOLN.

Registered Hospital for Mental Diseases, containing from 60 to 70 patients, situate in the City of Lincoln, close to the Cathedral.

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Licensed under Government Inspectors' Supervision,

As Hospitals for the Medical Care and Treatment of Patients of the Upper and Middle Classes suffering from

MENTAL AND NERVOUS DISEASES.

HIGHFIELD - - - FOR LADIES,

AND

HAMPSTEAD - - FOR GENTLEMEN

AT

DRUMCONDRA, Near DUBLIN.

Telephone No. 1032.

Voluntary Patients admitted without Medical Certificates.

Patients suffering from the Disease of Inebriety can be admitted either voluntarily or under Medical Certificates.

Relatives or Friends who desire to reside in the establishments with Patients can do so.

There are cottages for special cases on the demesne (154 acres).

Carriage and horse exercise is provided for the patients in the best manner.

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Members of the Medical profession and all persons properly interested in Patients, are invited to visit and inspect these establishments at any time they please.

Further information can be obtained from Drs. EUSTACE at Drumcondra, or at their Office, 41, Grafton Street, Dublin.

BAILBROOK HOUSE, BATH

For the Care and Treatment of Ladies and Gentlemen Mentally afflicted.

ESTABLISHED 58 YEARS.

Proprietors:

DR. LIONEL A. WEATHERLY. | DR. C. SPENCER COBBOLD,
MRS. LIONEL A. WEATHERLY. | *Late Superintendent Earlswood Asylum.*

Resident Medical Proprietor: DR. LIONEL A. WEATHERLY.

Beautiful Mansion standing in 30 acres of well-wooded Park, with lovely views of Bath and surrounding scenery. Fifteen minutes' drive from G.W.R. and Midland Stations, Bath. *Telephone No.* 49.

Horses & Carriages, Billiards, Lawn Tennis, Fishing, Boating, etc.

Great Improvements have recently been made in house and surroundings, *Vide* Visitors' and Commissioners' Reports.

A NEW WING HAS BEEN ADDED WITH EVERY MODERN IMPROVEMENT.

Terms inclusive from 2½ to 10 guineas per week, according to circumstances of case and accommodation required.

KINGSDOWN HOUSE,

BOX, WILTS.

A Private Home, with every comfort and convenience for those suffering from Mental and Nervous Diseases.

The situation is most healthy and picturesque, amongst the Wiltshire Downs, fifteen minutes from Box Station, and five miles from Bath.

The house stands in its own grounds, in the gardens of which the Patients employ and amuse themselves with tennis, croquet, &c., and the close proximity of country walks affording them the great advantage of extended exercise.

Voluntary Boarders can be received under the New Statute without Certificate.

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A Private Home for the Care, Education and Treatment of Backward and Feeble-Minded Children of good social position (not under certificates). A limited number, capable of improvement, are received. The education is of a special character, adapted to the requirements of each child, who receives personal supervision, individual care and attention, as well as all the comfort and privacy of home life. The house stands on an elevated position in grounds of three acres, on gravel soil, and is close to Coombe Wood and Richmond Park. The air is bracing, and there are pleasant walks in the neighbourhood. It is reached by a drive (twelve miles) from London, or by the Norbiton Station on the South Western Railway, one mile distant.

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This Home (long-established) for the Training and Education of Girls of the Upper Classes, who are Mentally Afflicted and unfit for ordinary schools, is under the personal care and superintendence of Miss PAGE, who has had much experience in such cases. References to Medical Men and others. Terms, &c., on application.

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For particulars apply to Dr. STEWART, Medical Superintendent, Heathcot, near Aberdeen.

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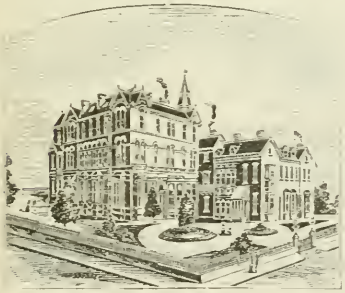

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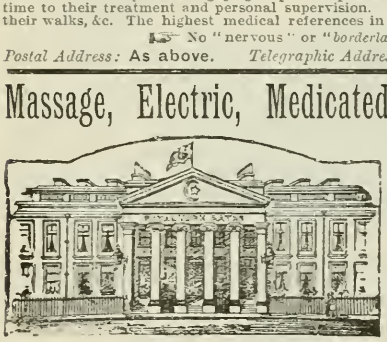

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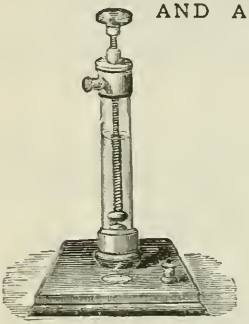

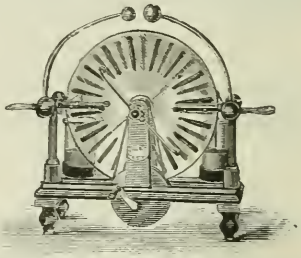

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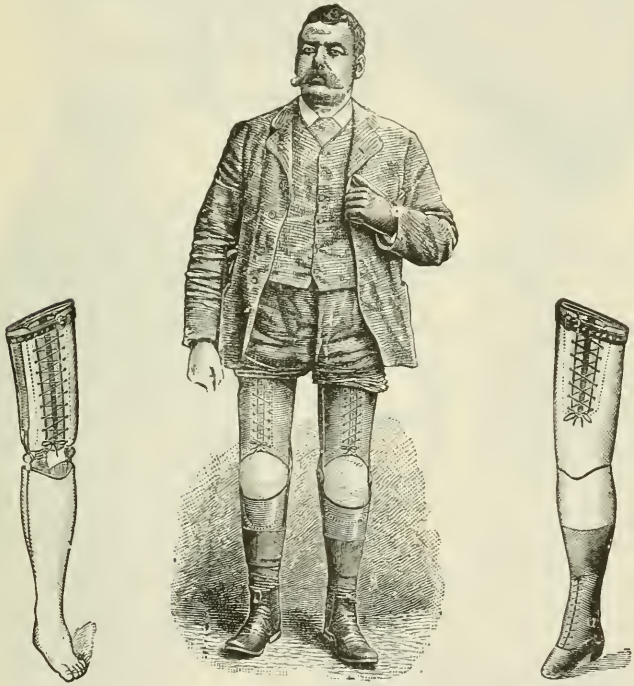

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THE RUMBOLL-BIRCH GAS AND ETHER INHALER.

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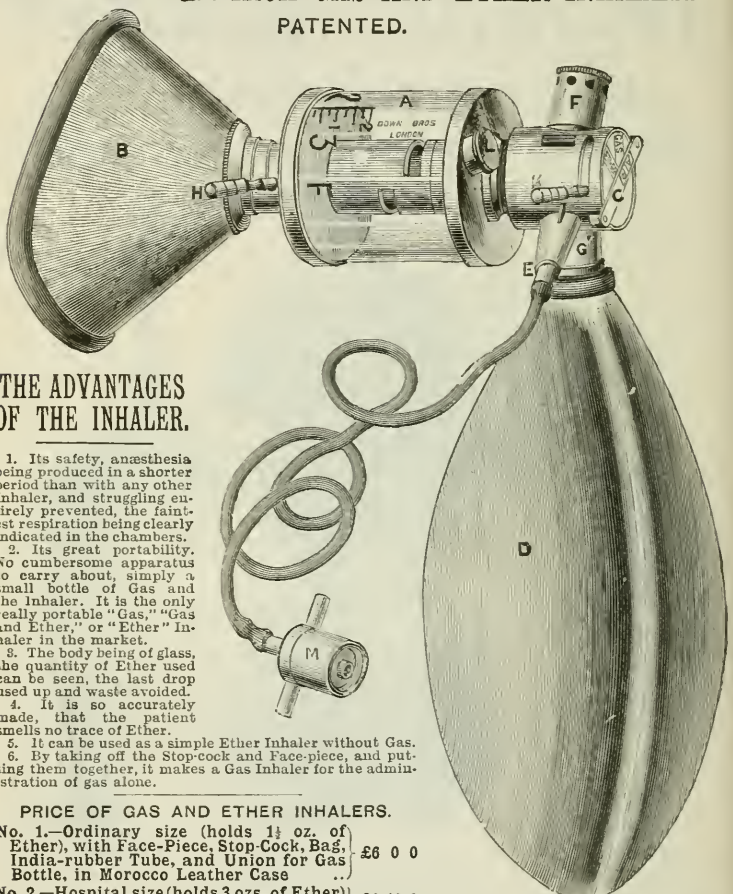


THE ADVANTAGES OF THE INHALER.

1. Its safety, anæsthesia being produced in a shorter period than with any other Inhaler, and struggling entirely prevented, the faintest respiration being clearly indicated in the chambers.
2. Its great portability. No cumbersome apparatus to carry about, simply a small bottle of Gas and the Inhaler. It is the only really portable "Gas," "Gas and Ether," or "Ether" Inhaler in the market.
3. The body being of glass, the quantity of Ether used can be seen, the last drop used up and waste avoided.
4. It is so accurately made, that the patient smells no trace of Ether.
5. It can be used as a simple Ether Inhaler without Gas.
6. By taking off the Stop-cock and Face-piece, and putting them together, it makes a Gas Inhaler for the administration of gas alone.

PRICE OF GAS AND ETHER INHALERS.

No. 1.—Ordinary size (holds 1½ oz. of Ether), with Face-Piece, Stop-Cock, Bag, India-rubber Tube, and Union for Gas Bottle, in Morocco Leather Case .. £6 0 0

No. 2.—Hospital size (holds 3 ozs. of Ether) ditto ditto ditto .. £6 12 6

Ether Apparatus alone, without Stop-Cock for Gas, in Case £3 12 6

SOLE WHOLESALE AGENTS—

DOWN BROS., Surgical Instrument Manufacturers,

5 & 7, St. Thomas's St., Borough, LONDON, S.E.

(Opposite Guy's Hospital.)

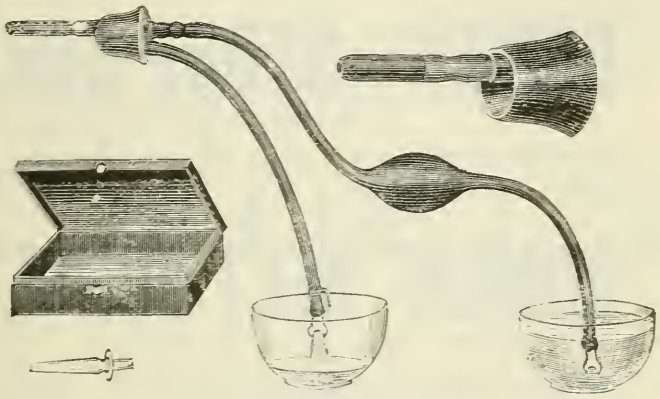
Telegraphic Address—"Down, London. Factory—King's Head Yard, Borough.

THE "ZULA"

Syringe and Irrigator.

Patented in England, Germany, France and America.

Patent No. 2310. Registered Trade Mark "Zula."



The "ZULA" has a plug for the mouth of the Vagina so constructed that the used liquid is compelled to pass out through its centre and through the outflow tube; it has also a flexible joint in the douche pipe which makes it easy to introduce; the plug is detachable from its socket into which a bone rectal pipe fits, thus forming an ordinary enema.

The "ZULA" is made of the best fine cut sheet black enamelled rubber with polished vulcanite plug and douche pipe and is supplied in a handsome box.

It is the best enema which has ever been brought before the public and can be obtained from all respectable Chemists, Druggists, and Surgical Instrument Makers.

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PREGNANCY, Accouchement, Corpulency, Umbilical Hernia, Floating Kidney.

"DOMEN" STOOP CURE

FOR

Round Shoulders and Weak Backs.

"DOMEN" BELT CORSET

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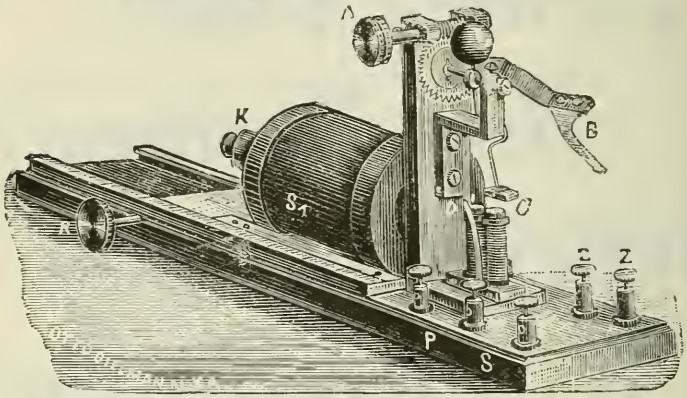

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Of every description.

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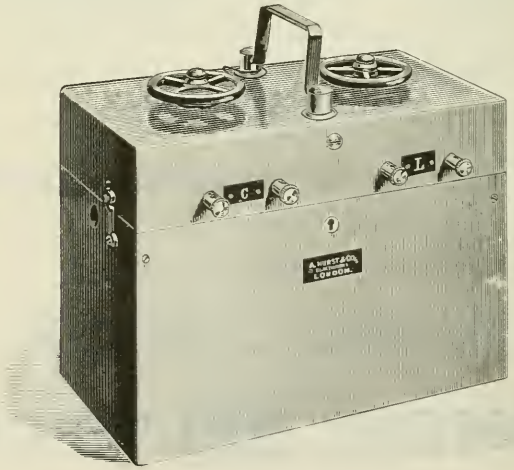

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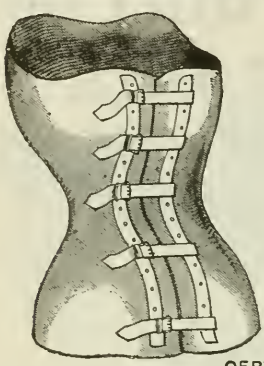
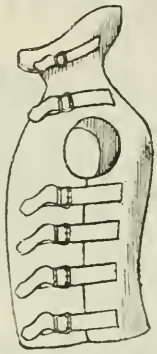
SPONGIOLINE, ETC.

COCKING'S PATENT
Poro-Plastic Jackets & Splints.



JACKET.



CERVICAL JACKET, No. I.
Designed by
W. J. WALSHAM, F.R.C.S.

CERVICAL JACKET, No. 2.

INSTRUCTIONS FOR MEASUREMENT, &c.

JACKET. *(In cases of Slight Deformity) :--*

Circumference at axilla
" waist.
" hips.
Length from axilla to great trochanter.

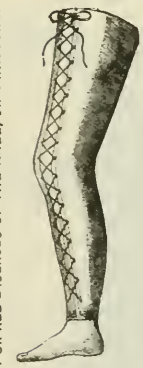
In severe angular cases, circumference over apex of curve, position of same, and contour should be given ; in lateral cases a description of the case.
In all cases it must be stated if for male or female.

CERVICAL JACKETS.

Same measurements and circumference at neck, and length from centre of neck to axilla.

Any part of the Jacket can in the process of Manufacture be left soft.

LEG SPLINT.
FOR ALL DISEASES OF THE KNEE, OR FRACTURE.



Made with soft front or with hinge at back, and foot part if required.

LEG SPLINT.

Circumference at top of thigh.	Circumference below knee.
" above knee.	" at calf.
" at knee.	" at ankle.

Length of splint as required.

State if for right or left leg.

When the foot part is required, also circumference at heel and instep, and length from centre of knee to ground.
If the limb is contracted the contour should be given.

Jackets, Splints and Poro-Plastic in Sheets may be had of our Agents.

Sole Manufacturer: **J. T. COCKING, PLYMOUTH.**

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AT THE

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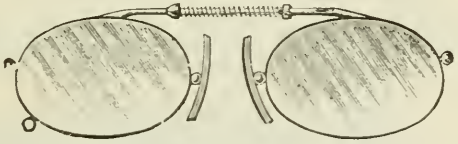
Inventors and Patentees



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Patent No. 8953, July, 1885.

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ILLUSTRATED CATALOGUE POST FREE ON APPLICATION.

46

FIG. 1.

Depot for Pure Inhalation Oxygen,
6d. per foot.

FIG. 2.

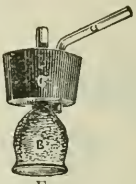

FIG. 3.

PRESTON'S 'ONE CELL' INHALER

PROTECTED.

FOR CHLORIDE OF AMMONIUM OR OTHER VAPOUR INHALATIONS.

PRICE—Card Box, 3/-; Wood Box, 4/-.

The simplest, most compact and effectual Inhaler extant. Gives a perfectly neutral vapour. *May be used for the Inhalation of Chloride of Ammonium, or for any Volatile Medicament, simple or combined.*

The medicated vapour is produced by the passage of air through the straight tube in Fig. 3 passing over a medicament loosely held on a FINE INCORRODIBLE GLASS WOOL, placed in the cap or funnel This single medicated vapour then passes over the surface of the second medicament, contained at the bottom of the vessel Fig. 2, and, combined or united, is then inhaled through the bent tube as Fig. 1, UNIMPAIRED or WEAKENED.

TESTIMONIALS.

The *Lancet*, May 30th, 1891, says—"The apparatus is simple, safe and effectual, gives a *neutral* vapour, and can be used for any volatile medicament."

The *Provincial Medical Journal*, May 1st, 1891, says—"Will be found serviceable wherein Chloride of Ammonium is indicated. . . . Is also cheap in price."

The *Nursing Record*, September 18th, 1891, says—"Subjecting it to a searching test, we find that it gives a perfectly neutral vapour. . . . The very thing that has been for a long time wanted, namely, a cheap, safe, reliable, and effective inhaler."

The *British and Colonial Druggist*, June 26th, 1891, says—"This compact little Inhaler has the advantages of simplicity, completeness, and *wide range* of application. Not only can it be used for Chloride of Ammonium, but also for any other volatile inhalation."

MANUFACTURED BY } J. PRESTON, Manufacturing & Wholesale Chemist,
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READING'S IMPROVED INVALIDS' COT CARRIAGE,

FOR THE REMOVAL OF INVALIDS.

With Removable Couch and Seats for Two or Four Persons.

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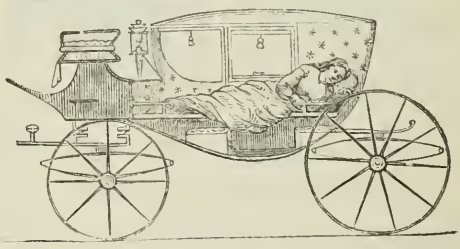

OR RAIL.

These Carriages are so constructed as to render Travelling easy and agreeable to the most confirmed Invalid, being fitted with noiseless Wheels and every appliance for ease and comfort, and let on moderate terms for any journey.

Also a large assortment of Rubber Tyred Vehicles for sale or hire.

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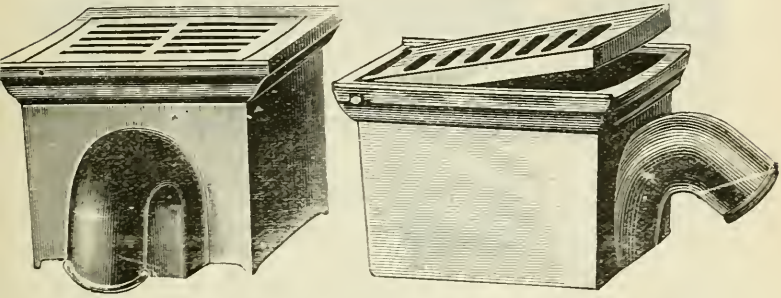
By Her Majesty's Royal Letters Patent.

CLARK'S PATENT GULLY TRAP,

For STREET and PRIVATE DRAINAGE PURPOSES.



All Sizes and Prices, from 5/- to £5.

This Patent Gully is the most efficient yet produced—affords a perfect trap to Sewer Gas at all times—is easier cleansed—has great flushing power. When sludge box is removed Drain is still trapped, and securely protected, and by the patent arrangement need never become frost-bound. Full description and particulars on application.

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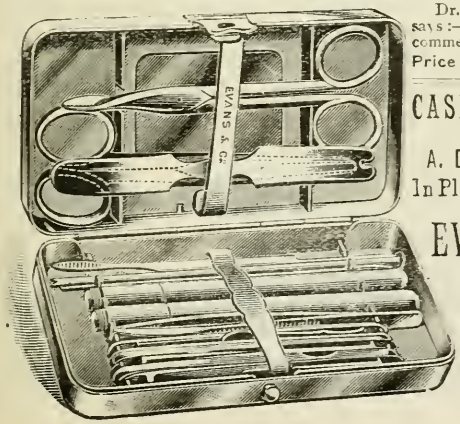

Dr. Edmund K. Houchin, London, says:—"I have much pleasure in recommending it to my colleagues."

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THE MOST EFFECTUAL BANDAGE FOR THE CURE OF ULCERS

AND OTHER DISEASES OF THE LEG.

Statham's Solid Rubber Bandages, Porous or Non-Porous, with Tapes or Buttons, in Grey or Black, made from the finest Para Rubber.

PRICES, POST FREE.

Feet.	Inch.	Each.	Feet.	Inch.	Each.
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7½ by	2½ ,, ...	3/-	7½ by	3 ,, ...	3/6
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Small WRIST BANDAGE, 3 ft. by 1½ inch wide, each 1/-.

Air and Water Beds and Cushions, Bed Sheets, Urinals, Ice Caps, Hot Water Pillows. *List post free.*

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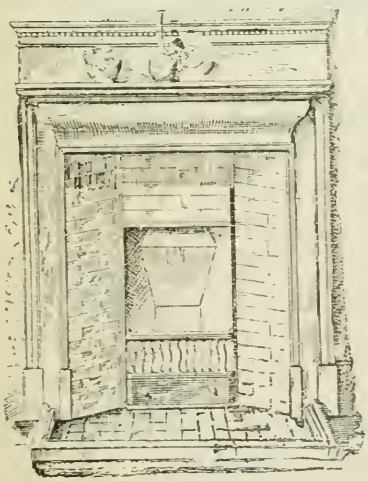

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ENTRANCE HALL STOVES

that burn continuously and give even temperature throughout the house.

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PRICE LISTS Post Free on application.

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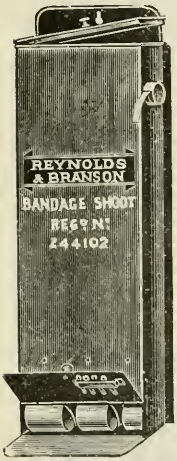
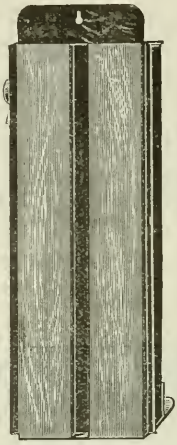
THE

BANDAGE SHOOT

REGISTERED No. 244102.



At the back of small Shoot are 2 wooden splints, suitable for arm or leg.
6 yards ½ inch Ribbon Plaster at side.



Hangs on wall, takes up no room.

Can be quickly unhooked off wall and carried to scene of accident, such as Colliery or Railway.

Undoubtedly the **best, handiest,** and most **cleanly** method of storing bandages.

No **time lost** searching for size of bandage wanted.

Always **ready,** always **clean.**

Impossible to run out of stock without warning.

Saves time, saves money; will repay its cost in less than a year.

Highly recommended by the Medical Profession.

Should be found in every Infirmary (Casualty Ward), Hospital, Private Surgery, Railway Station, Colliery, Factory, on board ship, Police and Fire Stations.

PROJECTS FROM WALL ONLY 2½ INCHES.

Large Size, 3ft. 3in. × 1 ft. 6in.; Small Size, 1 ft. 8 in. × 8in.

MADE IN TWO SIZES.

Large size holds 2 doz. 4 in., 2 doz. 3 in., 2 doz. 2½ in., 2 doz. 2 in., 3 doz. 1 in. (Finger).

PRICE, empty, **17/6**; filled with white open-wove absorbent bandages, **36/-.**

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ARGENTAMINE (SCHERING's) syn. Silver Phosphate Ethylendiamine. An organic silver salt penetrating into deap-seated tissues.

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OREXINE HYDROCHLOR. (KALLE & Co.'s). Stomachic tonic with stimulant action on appetite; given in wafers.

PANCREATINE (FINZELBERG's), extracted from the pancreatic juice of pigs and calves.

PARALDEHYD (SCHERING's). Hypnotic and sedative without action on the heart. Recommended as substitute for Chloral.

PHENOCOLL HYDROCHLORIDE (SCHERING's,) = soluble Phenacetine. A superior anti-pyretic, anti-rheumatic, anti-neuralgic, and effective in malarial fever; harmless to the blood and heart.

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SALOCOLL (SCHERING's) is a salicylate of Phenocoll, with similar therapeutic effects.

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Made of Pure Aluminium.
Light, Compact, Convenient Shape, and will not Tarnish.

PLEASE TEST
THE SOLUBILITY AND
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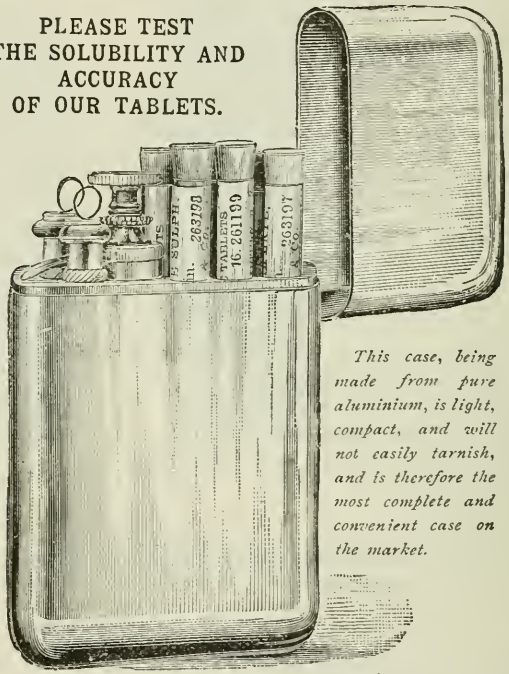

This case, being made from pure aluminium, is light, compact, and will not easily tarnish, and is therefore the most complete and convenient case on the market.

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We have been asked frequently of late if our Aluminium Hypodermic Case with Improved Syringe is in any way an imitation of any other case and syringe for sale in the market.

In order that medical men and others interested may judge for themselves, we give herewith cut showing actual size and the general appearance of our Case complete with syringe and tubes of Tablets. This Case was introduced into England a little more than four years ago and is, so far as we know, the first Aluminium Hypodermic Case introduced in this country.

IMPROVED HYPODERMIC CASE.

CONTAINS—Latest Improved Hypodermic Syringe, Two Fortified Needles, packet extra Wires, and six tubes Hypodermic Tablets, 25 Tablets in each tube. **Complete, 16s.**

A Solution can be prepared in barrel of Syringe, by simply dropping the Tablet in and adding water desired. Tablets dissolve at once.

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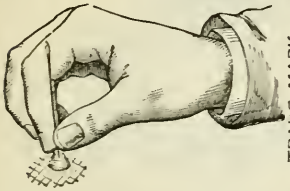
PURE VACCINE LYMPH.



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Sole Agents for Dr. Warlomont's Calf Vaccine.

CALF VACCINE.—Tubes, 2s. each; Half Tubes, 1s. each. Pomade in vials, 5s. each, prepaid.

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PIN-POINTS uncharged, 1s. per dozen.

VACCINE EJECTORS.—1s. 3d. each, including postage.

Office hours, 10 to 4; Saturday, 10 to 2.

Postage Extra. Post Office Orders (with orders) crossed London and Westminster Bank.

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Extractum Corticis Cerebri (BRAIN EXTRACT.)

A whitish powder extracted from the cortical portion of healthy brains, and containing in concentrated form the essential constituent or constituents of the higher nerve centres. This extract may be regarded as a nerve food of high value in promoting the nutrition of the central and peripheral nervous systems. "Extractum Corticis Cerebri" is, therefore, recommended for use in those innumerable maladies which are grouped under such titles as Neurasthenia, Nervous exhaustion, Hypochondriasis, &c., and also in failure of the intellectual faculties arising from excessive intellectual exercise. It deserves trial in all nerve diseases of an atrophic nature.

The dose of "Extractum Corticis Cerebri" is fifteen grains three times a day, after meals, in half a wine-glassful of water.

PRICE IN BOTTLES, 3/- and 5/-.

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Chemists and Export Druggists,

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VACCINATION FROM THE CALF DAILY FROM 11 TO 12 O'CLOCK.

Prices of Calf Lymph (Daily Fresh).

TUBES { Large 2/- each or 3 for 5/6 / Small 1/- each or 3 for 2/9 | POINTS { Large 1/- each or 3 for 2/6 / Small 9d. each or 3 for 2/-

SQUARES .. .. 2/6 each.

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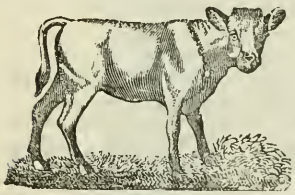

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A new and efficient remedy in the topical or local treatment of Infectious, Inflammatory, Catarrhal, or Ulcerative Diseases of the **Mouth, Throat,** and **Nose**: Diphtheria, Croup, Scarlatina, Mobilli, Influenza, Pertussis, Aphtha, Tonsillitis, Parotitis, Stomatitis, Glossitis, Gingivitis, Pharyngitis, Laryngitis, Rhinitis, Folliculitis, Ozœna, Coryza, Syphilis, &c.

Prepared **specially for the use of Members of the Medical and Dental Professions and for Dispensing Purposes only**, from the formula of Dr. JOHN BROOM, Acting Physician and Surgeon to the Bristol Institution for Skin and General Diseases.

BOTTLES, including Brushes and author's Monograph, **4/6** and **10/6** each.

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ANTISEPTIC & SOLUBLE

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FOR THE TOILET AND NURSERY.

Soothes the Skin and allays Irritation from Sunburn, Cold Winds, &c., &c.

TWELVE YEARS IN USE, WITH SIGNAL SUCCESS.

"*THE MEDICAL ANNUAL* says:—"The best form of Dusting Powder for Nursery and Toilet use which has come under our notice."

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Invite special attention to their

Lithia, Potash & Soda Waters.

Being guaranteed of full Pharmacopœial strength, these Waters are the only kind likely to be of service where the remedial effect of the alkali is required.

Also *Seltzer Water.*

Citrate of Potash Water. 30 grains to the ½-pint.

Mineral Acid Water. A delicious and wholesome sparkling beverage (containing Nitro-hydrochloric Acid) especially grateful to Convalescents. It is prescribed with marked benefit in PHTHISIS, and in the Treatment of Sluggish Liver and Indigestion.

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A safe, convenient, and economical anæsthetic for producing local anæsthesia in **Dental** and **Surgical Operations**, also valuable for subduing pain in **Sciatic** and **Rheumatic Affections.**

Compressed in nickel-plated copper cylinders containing 120 fluid grammes each. Empty cylinders, if returned in good condition, are allowed for.

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An approved local anæsthetic for **Dental** and **Minor Surgical Operations.**

Packed in glass bulbs containing 10 or 30 fluid grammes each. Boxes containing 1 or 3 bulbs of 30 grammes and 10 bulbs of 10 grammes.

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Indicated in all dropsies due to cardiac and renal affections. Absolutely non-poisonous. Free from unpleasant by-effects.

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The well-known analgesic indicated in **Sciatica, Lumbago, Angina Pectoris, Locomotor Ataxy, Cephalalgia,** and other neuroses accompanying attacks of Influenza.

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Above articles are sold by all the Wholesale Drug Houses, or, where not obtainable, apply direct to

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Other Specialities: Salol, Salicylates (Knoll), Tannic, Gallic and Pyrogallic Acid, Quinine Wine, etc.

FULL PRICE LISTS, PAMPHLETS, Etc., ON APPLICATION.

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(COX'S PATENT.)

Dated and Sealed

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AND AS A FURTHER PROTECTION

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These contain 800 Coated and Uncoated forms of different strengths, requiring not less than 3,000 bottles and jars, and our stock includes the majority of the approved new remedies (suitable for pilular form) up to present date.

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COX'S TASTELESS PILLS,

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Our Mr. COX invented and introduced pearl-coating to render Pills tasteless more than forty years ago, and our trade, which is constantly increasing amongst the highest class of medical men and chemists, is doubtless four or five times as large as the rest of our copyists put together.

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The ONLY preparation of Cinchona which can be administered without fear of producing headache, *tinnitus aurium*, or gastric disturbance is

Liq. Cinchonæ Hydrobrom.
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Dose. m v to m x.

It contains in perfect solution, not only the whole of the alkaloids, but also the Kinic, Cinchotannic, and Kinovic Acids, together with the aromatic constituents of the bark, IN INTIMATE ASSOCIATION WITH BROMINE.

Brilliantly soluble in Distilled Water.

Sole Manufacturers under Royal Letters Patent,

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Samples and full particulars sent FREE to any Member of the Profession on request.

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BONTHRON'S
DIABETIC BREAD & BISCUITS.

Dr. PAVY, in his recent work on "Diabetes," p. 245, says :—

"Mr. BONTHRON, of 106, Regent Street, has recently succeeded in producing some Gluten Biscuits and Bread which are more eatable than anything of the kind I have ever yet met with. The Biscuits present somewhat the character of a cracknel; they eat short and crisp, and are really reducible in the mouth; having no unpleasant taste; and, consumed with other food, possess the power of cleansing the palate. The Bread is moist, and will not keep good or more than about ten days. Its consumption therefore involves a frequent supply. It serves to increase the variety at the command of the Diabetic; and, independently of this, possesses the advantage of presenting an approach to the condition of ordinary bread."

"The LANCET" of June 9th, 1877, under the head of Analytical Records, says :—

"We have received from the above well-known maker no less than six different samples of biscuits, etc., intended for diabetic treatment. No. 1 is called the 'Diabetic Biscuit,' and contains much gluten and very little starch. No. 2 is the 'Regent Biscuit,' made from gluten and prepared bran. No. 3 is an 'Almond Biscuit,' and the rest are modifications of the first two. They are excellent preparations; and though, of course, they are not so palatable as if they contained the normal quantity of starch, they can be eaten without difficulty or repulsion. Indeed, it is not easy to see how they could be improved."

The Bread is made fresh every day, and, as has been already noticed, will keep good for a week; a supply can thus be forwarded to any part of the Kingdom. The Biscuits will keep good for almost any length of time, and on this account are well adapted for exportation.

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The new COFFEE AND CRESSINI BISCUITS, now widely recommended by Medical Men, are very agreeable and pleasant.

These preparations have just lately been awarded the Silver Medal, highest award in class, in the Edinburgh Exhibition.

GLUTEN FLOUR, 2 6 per lb. BISCUITS, 3 6 per lb.
LOAVES, 9d. each. BRAN, 1s. per lb.
The LOAVES can be sent through the Post, 1s. each.

Both Bread and Biscuits have now been before the Medical Profession for over 25 years with the highest results, and with the greatest satisfaction to those requiring to use them, and whose testimony (after years of trial) of the great advantage they continue to derive from them, constitute their best recommendation.

As Gluten Preparations are costly, and will keep good any length of time, it is cheapest and best to communicate direct with the Maker,

JOHN BONTHRON, 106, Regent Street, London.

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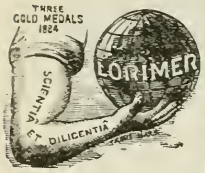

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½-lb. bottles, unstamped to the Profession - - 21/- doz.
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Winch. Quarts - - - 2/6 lb.

Is not a quack preparation or secret nostrum; the formula is printed on every label.

The formula is original, founded upon scientific principles, and has stood the test of practical experience. There is no other preparation of the Hypophosphites which contains so large a proportion (about six grains to the fluid drachm) of the salts employed.

All its constitutents are in perfect and permanent solution, the last dose being identical, under all circumstances, with the first. There is consequently no possibility of danger from the precipitation of Strychnine, as is the case with preparations that require shaking to distribute the dose.

It is neutral, or very slightly alkaline, and can therefore be taken without ill effect by persons afflicted with sensitive stomachs, which would probably reject acid or strongly alkaline preparations.

Other preparations of similar name are either strongly acid, of unknown composition (varying from half to three grains Hypophosphites to the drachm), or **deposit their active ingredients on standing;** *many* have all these faults.

CAUTION.

As we have had several cases brought under our notice where inefficient imitations have been dispensed instead of our Syrup, causing much disappointment and annoyance, Physicians will oblige by writing, "Syr. Hypophosph. Co.: (Lorimer)."

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Operates as a Nerve Stimulant and muscular Tonic, much used in relieving fatigue from excessive mental and physical exertion, and where a general toning or strengthening of the system is needed.

Useful in various disturbances of the digestive organs.

Prepared from Coca Leaves (Erythroxylon Cocæ).

As an ordinary restorative it should be taken two or three times a day in wineglassful doses.

CAUTION.—In order to avoid the substitution of impudent imitations, often worthless, and consequently disappointing in effect, the Medical Profession are respectfully requested to specify "Vin Coca (Lorimer's)" when prescribing.

Always uniform and reliable.

A recent unsolicited Testimonial, which may be seen, with many others, at our Offices.

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WINE,
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Sweetened with Saccharin or plain.

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KALOS BISCUITS, And other
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INVALID'S REAL TURTLE SOUP, made from Fresh Green Turtle.
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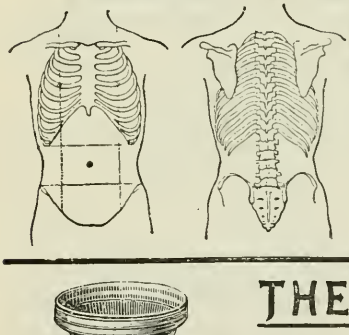

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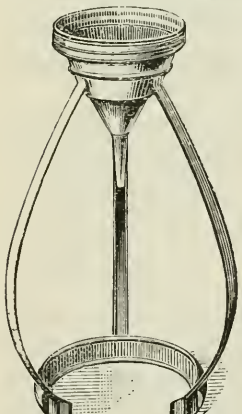

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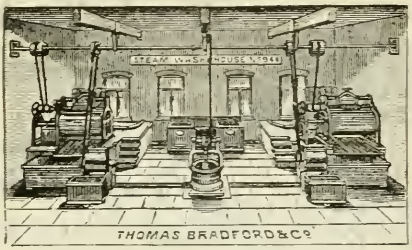

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